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ABSTRACT

This document summarizes recent research on substance abuse among American Indian youth. The overview provides information on the nature and extent of the problem, use correlates and risk factors, and prevention. A conclusion is that factors that predispose American Indian youth to substance abuse include family disruption and dysfunction, which are often compounded or arise out of socioeconomic tribal problems; prejudice against Indians; and lack of educational opportunities among their parents. Recommendations, which should be adapted to the specific tribe, include: (1) strengthen reservation families; (2) provide available and effective adult alcoholism treatment; (3) enhance cultural programs and activities; (4) utilize extended families; (5) identify at-risk children and retain them in school; (6) implement culturally appropriate school-based prevention programs; (7) expand student support and intervention services; (8) and provide more positive activities for youth. The second section contains abstracts of 40 studies. (LMI)

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Western Regional Center
DRUG-FREE SCHOOLS AND COMMUNITIES

Prevention Research Update
No. 11
Fall 1993

RECENT RESEARCH ON SUBSTANCE ABUSE AMONG AMERICAN INDIAN YOUTH

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Prevention Research Update
no. 11 / Fall 1993

RECENT RESEARCH ON SUBSTANCE ABUSE AMONG AMERICAN INDIAN YOUTH

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The *Prevention Research Update* series is a current awareness service prepared by the Western Regional Center for Drug-Free Schools and Communities, which summarizes recent research on adolescent drug abuse and its prevention. Each issue abstracts and reviews the prevention implications of new research dealing with a major topic of concern in the field, placing the new information in the context of past findings. The goal is to help bridge the communications gap between the researcher, the practitioner, and the general population, by disseminating research findings in an accessible manner and providing an introductory review of their significance. Abstracts are arranged alphabetically by first author's last name. Preceding the abstracts is an overview discussion in which references to abstracted studies are identified by an asterisk (*). References to all documents cited are located following the abstracts. Copies of the Updates, listed on the last page of this issue, are available from all the Western Center sites.

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OVERVIEW

The U.S. Indian Health Service (IHS) has called substance abuse the number one health problem among American Indians. Of all American populations, no youth appear to be more at risk of alcohol and other drug (AOD) abuse than Native Americans.[1] Pinto (1973) characterized it as a growing crisis and "a major national scandal." By the early 1980s, concerns over this problem had further escalated, especially in regard to illicit drugs, about which Pinto had little to say. Research indicated that AOD use among Indian youth had increased dramatically during the 1970s, at a much faster rate than among non-Indians.[2] For example, heavy alcohol use was reported by 2% of youth in the 1987 IHS survey, compared with 0.2% in 1975 (Moore 1988). Adding to these concerns, Indian youth are proportionally a larger share of the total Indian population than are youth in other ethnic groups. An average of 12% of Native Americans are in the second decade of life, compared to 9% of other racial-ethnic groups (IHS 1990). In 1983, more than half of all Indian people were under age 20, compared to a median age of 30 for the rest of the country (Oetting, Beauvais, & Edwards 1988*:88). By 1988, the dimensions of the problem and its associated societal costs were characterized as "appalling" (Moore 1988).

In response, in 1986 the Indian Health Service launched an intensive, community-based prevention initiative and Congress included a mandate for increased prevention activities on behalf of Native Americans in the Anti-Drug Abuse Act. There was also a rapid increase in research. Indeed, the body of research has increased so markedly since the publication in the Winter of 1988-89 of *Update 2*, which included a discussion of AOD use among Native American youth (Austin 1989), that this new Update became warranted.

In the mid-1980s, we still knew relatively little about the scope and nature of the problem. As with other minority groups, there has long been tremendous gaps in our knowledge of the extent and nature of AOD use among Indian youth. Most AOD research on Native Americans was limited to alcohol use among adult males living on reservations. There were many fewer studies on adolescents (male and female), on use in urban settings, and on illicit and street drugs. We also knew very little about the evolution, operation, and effectiveness of prevention and treatment programs. Furthermore, what we did know was not easily generalizable from tribe to tribe. Most of the research had been conducted on Indians in the southwest, yet there are 481 tribal groups throughout the country, each with different circumstances and situations. AOD use patterns may vary greatly from tribe to tribe. For example, adult research suggests that Hopis do not drink, while many Navajos actively seek intoxication (Finley 1989:34). Much of the evidence collected in the 1970s was poorly documented, lacking in detail, inconclusive (varying widely in results), and inadequate for either theoretical or practical purposes (Beauvais, Oetting, & Edwards 1985*:210; Leland 1980; May 1982; Trimble, Padilla, & Bell 1987*:5;

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[1] In this overview, the designations *American Indian*, *Native American*, and *Indian* are used interchangeably. The once-preferred designation of Native American is now out-of-favor with many because, in addition to the aboriginal peoples of the continental United States—American Indians, Eskimos, or Aleuts—it can also include natives of Hawaii and "descendants of migrants from other nations who have settled in the United States" (Fleming 1992:150). Therefore, in the title we use the term *American Indian*.

[2] Beauvais, Oetting, & Edwards (1985); Cockerham (1977); Cokerham, Forlund, & Raboin (1976); Heidenreich, (1976); Oetting, Beauvais et al. (1980), (1982); Oetting & Goldstein (1979); Oetting, Verlarde, and Beauvais (1980); Strimbu, Schoenfeldt, & Southern (1973); Swanson, Bratrude, and Brown (1971).

and Trimble 1984, who laments that "a particular dearth of information exists").

Since then, several new and longterm projects have helped to define the nature and extent of the problem more clearly, to identify contributing factors, and to develop culturally sensitive and appropriate prevention approaches. The oldest (since 1975) and most extensive study, and the source of much of the epidemiological information about Indian adolescents, is the ongoing research at the Tri Ethnic Center for Prevention Research at the University of Colorado by E.R. Oetting, Fred Beauvais, Ruth Edwards, and colleagues, hereafter referred to as the TEC surveys. These surveys have been especially important for examining trends in use for over the past 15 years. Each survey includes about 1500-2500 students in grades 7th through 12th from 5 or 6 reservation tribes that are sufficiently diverse geographically, culturally, and socioeconomically to contribute to a representative sample. The results for Native Americans have been regularly compared to three other groups: the 12- to 17-year-old sample from the National Household Survey on Drug Abuse, the 12th-grade students from the National High School Senior Survey, and Western non-Indian community youth surveyed by TEC. The latest survey period for which results have been reported included both reservation Indians and nonreservation Indians. Beauvais (1992a*) has produced a special issue of *American Indian and Alaska Native Mental Health Research* that presents the data up to 1990.

In other research reviewed here, national data are provided by the 1989 Indian Adolescent Health Survey, in which a total of 13,454 American Indian-Alaska Native 7th through 12th grade youths were surveyed in nonurban schools from eight Indian Health Service areas nationwide (Blum, Harmon et al. 1992*). Steven Schinke, Lewayne Gilchrist, Michael Moncher, and Joseph Trimble have been studying patterns of use and the efficacy of prevention approaches targeting American Indians in the Pacific Northwest. In 1988, a longitudinal Native American Boarding School Survey began (Dick, Manson, & Beals 1993*; King, Beals et al. (1992*). Carpenter, Lyons, and Miller (1985*), Okwumabua and Duryea (1987*), and Young (1987*) also conducted research specifically on Native American samples.

The number of multiethnic comparason studies have also increased. Bachman, Wallace et al. (1991*) included Native Americans in their first published analysis of ethnic group data from the annual National High School Seniors Survey (NSS). Data were compared for six ethnic groups for combined samples from the years 1985-1989, with the Native American sample consisting of 537 males and 531 females. This has added considerably to our knowledge about AOD use among Native American youth compared to other ethnic groups and the results are reported in detail in this review.

In addition, the results of several multiethnic state or local surveys have been reported for California (Newcomb, Maddahian et al. 1987*; Skager & Austin 1993), Alaska (Segal 1992*), Montana (Finley 1989*), New York (Welte & Barnes 1987*), the Northcentral USA (Murray, Perry et al. 1987*; Murray, Rocke et al 1988*), the Southeast (Riley, Barenie et al. (1990*, 1991*), the Southwest (Harris & Ford 1988*). Siegelman, Didjurgis et al. (1992*) report on a comparative study of views of problem drinking.

The field is still plagued with methodological problems in the research and major gaps in knowledge. In national surveys, the number of Native Americans is often too low for any valid conclusions to be drawn. Thus they have been excluded from the ethnic breakdowns reported for the National Household Survey on Drug Abuse (NHS), conducted

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[3] The representativeness of the samples has been further indicated by: (a) the consistency of the data over time, regardless of the tribes included; (b) changes in repeated surveys of the same tribe have matched samples from different tribes obtained at the same times; and (c) although Indian youth generally have had higher rates of AOD use, their trends across time parallel national trends of alcohol and drug use of non-Indian youth.

somewhat irregularly since 1971 using a national probability sample of households. Even in multiethnic surveys in states which include large populations of Native Americans, comparative analyses are often weakened by small sample sizes. Although the state and local multiethnic studies have enriched our knowledge about Native Americans compared to other ethnic groups, caution often needs to be used in interpreting their results because of small sample sizes of Native Americans or wide variations in the sample sizes across different ethnic groups. For example, In the 1992-93 biennial statewide California Student Substance Use Survey (hereafter referred to as the California Student Survey or CSS), data were analyzed for AOD use in the past six months among a combined sample of 5,543 9th and 11th graders across five ethnic groups (Skager & Austin 1993). However, the total number of Native Americans ($n = 117$) was too low to draw any firm conclusions except for the most commonly used drugs (i.e., alcohol, tobacco, and marijuana). In the Alaska Student Survey (ASS) of 7th-12th graders in 1983, Native Alaskans were the second largest group in the sample ($n = 721$) after Whites, but the numbers of other ethnic minorities were so small (generally under a 100) that comparisons with them are still of limited value (Segal 1992*). In a survey 2,234 students in grades 6-12 in western Montana, Finley (1989*) draws conclusions regarding differences in alcohol consumption between genders among Indians and non-Indians by grade levels using samples of only 20-30 Indians, versus 400 to 1,000 non-Indians.

Many of the gaps in knowledge also still remain, particularly in regard to tribal variations and differences between reservation and non-reservation Indian youth. We are still just beginning to define the problem as it relates to many subgroups and tribes. Nevertheless, over the last five years the quantity and quality of the research has greatly improved and our knowledge has increased markedly. In this overview, the findings of these studies in regard to the nature and extent of AOD use among Native American youth will first be reviewed on a drug-by-drug basis. This is followed by a summary of the research on use correlates, especially the risk factors that account for the high levels of use among this population as well as the protective factors that promote resiliency. The final section discusses the prevention implications of these findings and reviews published program evaluations. Taken as a whole, the evidence indicates that Native American youth generally still exhibit greater use of psychoactive substances than youth in any other U.S. ethnic group. Overall prevalence rates have declined in the course of the 1980s and significant strides have been made in the development of prevention and intervention programs. However, there appears to have been little progress in regard to some drug categories and in the rate of heavy use.

NATURE AND EXTENT OF THE PROBLEM

The evidence uniformly demonstrates that substance abuse is widely prevalent among Native American adolescents and even younger children, although important intertribal variations do exist. Rates of overall use for almost all drugs, but especially tobacco, marijuana, and inhalants, have been consistently higher among American Indian youth than non-Indian youth.[4] Although rates for lifetime alcohol drinking do not appear to differ significantly from those of Whites, Native Americans do report much higher levels of alcohol consumption, intoxication, and alcohol-related problems.

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[4] In addition to the studies abstracted or reviewed in this Update, see also: Lambert (1988); Weibel-

Alcohol

American Indian alcohol use is a persistent, complex phenomenon of epidemic proportions (Trimble, Padilla, & Bell 1987*; Williams 1985). Alcohol is by far the most widely abused drug among all age groups. The overall rate of alcoholism is two to three times the national average and the IHS has estimated that significant drinking problems are experienced by as many as 50% of the population of some reservations and has called it their single most significant problem (Carpenter, Lyons, & Miller 1985*:300; Yates 1987:1136). The frequency of alcohol-related problems is thought to be three times the rate for patients in the general population (Heath 1989). While the incidence of fetal alcohol syndrome is 1-3 per 1,000 live births in the US in general, among some native American tribes the incidence is as high as 10:1,000 (Rogan 1986). Alcohol abuse is believed to be a direct contributor to four of the top ten leading causes of Indian death (accidents, liver disease, homicide, and suicide) and, for all alcohol-related causes of death, the Indian age-adjusted mortality rates are higher than for the nation as a whole (Heath 1989; Podolsky 1986/87:7). Among youth, research has consistently found widespread and often heavy and rapid consumption, generally at rates higher than non-Indian populations and with fewer gender differences.

Overall Use Prevalence

The majority of all youth of most tribes (56%-89%) have experimented with alcohol (May 1986*:188). Almost 92% of youth on the Wind River Reservation reported trying alcohol and 80% considered themselves regular drinkers (Cockerham 1975). In the Indian Boarding School Study, 87% of the secondary school students had tried alcohol, and 75% had used it at least once in the previous year (King, Beals, et al. 1992*).

When compared with "non-Indian" samples, Indians generally report higher prevalence rates. A 1987 Indian Health Service survey indicated that in 1985, 78% of 7th-12th graders had used alcohol, compared with only 57% of non-Indians in the same grades (Moore 1988). Among a sample of 1400 American Indian secondary school students, 82% reported having used alcohol at least once, compared with 66% of non-Indian youth sampled. In addition, 50% of Indians reported that they had used alcohol in the recent past, compared with 27% of non-Indians (Beauvais & LaBoueff 1985:147-149; Beauvais, Oetting, and Edwards 1985*).

Comparative data across specific ethnic groups indicate that Native American and White adolescents tend to report the highest prevalence of use. In some surveys, rates are highest for Native Americans; in other cases, Whites consume somewhat more, or there was general equivalence between them. The 1988-90 TEC survey indicates that 74% of reservation Indians in grades 7-12 reported lifetime drinking. Among both 8th and 12th graders, there was little difference between reservation Indians and Whites (Beauvais 1992a*). In the same age-range, the 1983 New York Secondary Student Survey (NYSS) of over 27,000 youth found that 76% of Whites and 73% of Native Americans had used alcohol within the past year, compared to 45%-63% for other groups (Barnes & Welte 1986; Welte & Barnes 1987*). In the 1988 Alaska Student Survey, Whites and Alaska Natives reported similar lifetime rates (75% and 74%) (Segal 1992).

National Senior Survey data indicate that prevalence rates for any alcohol consumption in the past year and past month (current) were higher among Native Americans than any other ethnic group except Whites (Bachman, Wallace et al. 1991*). Current use rates were 69% (Indian) and 71% (White) for males and 60% and 67%, respectively, for females.

Among 9th and 11th graders in the 1991-92 California Student Survey, across all forms of alcohol, Whites and Native

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Orlando (1984); Query (1985); Wingert & Fifield (1985).

Americans had the highest—and roughly equivalent—prevalence rates of use in the past six months. The largest difference between them occurred in regard to spirits drinking, reported by 54% of Native Americans, compared to 51% of Whites. Rates for any alcoholic beverage were 75% among both groups, compared to 68% among Blacks and 57% among Asians (Skager & Austin 1993). Similar rankings in lifetime use were reported by Newcomb, Maddahian et al. (1987*) in their multiethnic survey of 7th, 9th, and 11th graders in Ventura County, California (including 94 Native Americans, 3% of the total sample).

Frequency and Level of Use

Even more problematic, American Indian youth appear to be more prone to "binge drinking"—frequent, heavy patterns of use—than any non-Indian group. Much of their drinking is characterized by high incidents of blackouts and extremely drunk behavior (Beauvais & LaBoueff 1985*:147-149). Even in studies in which Whites reported equivalent or even higher lifetime use prevalence rates than Native Americans, Indians exceed Whites in measures of heavy or frequent use.

The government has estimated that drinking problems are experienced by 42% of adolescent males and 31% of females (Laign 1988). Youth on the Wind River Reservation most frequently cited drinking alcohol among possible sources of trouble (Cockerham 1975). Query (1985) found that Indian youth were overrepresented ten-fold in one North Dakota state alcoholism treatment unit.

In the 1989 Indian Adolescent Health Survey, weekly or more frequent alcohol use started early and rose from 8% of 7th graders to 14% of 12th graders. For males, the survey noted an increase in regular alcohol use of 3% to 5% in each grade level, rising to 27.% in 12th grade. Just over 10% were considered potential problem drinkers based on at least weekly drinking, with an average consumption of three or more drinks each time (Blum, Harmon et al. 1992*).

Among 188 American Indian boarding school students surveyed by Dick, Manson and Beals (1993*), one third (*n* = 63) had used alcohol at least three times in the previous month (defined as moderate to heavy use). Half classified themselves between "moderate" and "very heavy" drinkers, 42% had consumed six or more drinks on a single occasion, 45% reported they had experienced blackouts in the previous six months, and 9% had received some treatment for alcohol abuse or dependence. The majority of respondents indicated either occasional binge drinking or frequent drinking of small amounts of alcohol, and 42% repoted having gotten drunk at least once in the previous month. Similar findings are reported in the the third followup survey of this sample almost a year later: One quarter reported using alcohol every weekend, and 54% indicated that they have at least six drinks when they drink—73% of these said they drank until they were high. Heavy or very heavy drinking was reported by 14% (King, Beals et al. 1992*).

National Senior Survey data show rates of heavy drinking (defined as 5 drinks in a row on the same occasion in the past two weeks) were similar or higher among Native Americans (depending on gender) than Whites, even though Whites reported higher current prevalence rates. Heavy drinking was reported by 48% of male, and 34% of female, Native Americans. A similar pattern was found for daily drinking (Bachman, Wallace et al. 1991*).

In the 1984 TEC survey, in both grades 8 and 12, a greater percentage of Indian than non-Indian youth again reported getting drunk (Oetting and Beauvais 1989). Both groups first got drunk at about the same age, but once they started drinking, Indian youth get drunk more often. More Indian youth also reported experiencing blacking out, suggesting they may consume more alcohol when they do get drunk (Oetting & Beauvais 1989*). In 1988-90, rates for lifetime drunkenness were much higher among reservation Indians than Anglos: among 8th graders 49% vs. 27%; among 12th, 87% vs. 73%. Similar results were found for 30-day drunkenness prevalence rates (e.g., 24% vs. 10% among 8th graders) (Beauvais 1992:16-17). These patterns of heavy use of alcohol among young Indians are not an isolated or time-localized phenomenon, but are relatively consistent over the history of the TEC surveys.[5]

In the Pacific Northwest, weekly alcohol intoxication has been reported by 38% of Indian youth, compared with 13% of non-Indians (Schinke, Bebel et al. 1988*:516). Among the New York state students surveyed by Welte and Barnes (1987*), a higher proportion of Indian youth were heavy drinkers than in other ethnic groups, even though Whites exceeded them in overall use prevalence: 18% of Native Americans reported themselves as heavy drinkers, as compared to 16% of the Whites), 8% of Hispanics, 5% of the Blacks, and 6% of Asians (see also Barnes & Welte 1986).

In the 199-92 California Student Survey, although the small sample size of Native Americans renders the results unreliable, the ethnic group rankings for drinking alcohol once a week or more often in the past six months were consistentent with the rankings for overall use. Native Americans, Whites, Hispanics, and Mixed Ethnicity reported similar rates (roughly a fifth of each) (Skager & Austin 1993).

Gender Differences

Of all ethnic groups in America, gender differences in drinking among adolescents appear to be smallest among Native Americans (e.g., Cockerham 1975). As found for ethnic groups as a whole, differences between Indian and non-Indian females increase as the level or frequency of use increases. Indeed, some studies show that heavy drinking or drinking problems are greater among Native American girls than boys.

Among the Indian boarding-school students surveyed by Dick, Manson, and Beals (1993*), greater percentages of females than males reported alcohol use on school days, both during the day and in the evenings. Similarly greater percentages of females than males reported experiencing blackouts.

In a large national survey of alcohol use among White, Hispanic, Asian, Indian, and Black youths conducted in 1974, abstinent girls generally outnumbered abstinent boys in all five groups, but among the Indian sample the abstaining male-to-female ratio was greatest and the ratio of male-to-female heavy drinkers was smallest. Among those adolescent girls who did drink, heavy drinking was most prevalent among Indians (Rachal, Williams et al. 1975, cited by Weibel-Orlando 1989).

The National Senior Survey data revealed current alcohol drinking rates were higher among Whites than Native American regardless of gender, but the pattern for heavy alcohol consumption differed. For males, Native Americans reported rates equal to Whites (48%). For females, Native American rates exceeded those of Whites (34% vs. 31%). Similarly in the California Student Survey, overall and weekly drinking among Native American females noticeably exceeded White, Hispanic, and Mixed Ethnicity females, but rates among Native American males were equivalent or lower than among the other groups.

In the 1984 TEC survey, at age 12, 25% more Indian males reported having been drunk than females. But as Indian females age, the number who have been drunk surpassed both non-Indians and converged on the male Indian rates. By age 20 it appears that equal numbers of Indian males and females have been intoxicated at least once (Oetting and Beauvais 1989). In the 1988-90 survey, among 12th-grade reservation Indians, both genders reported similar rates of high (about 15%) and moderate (38%-40%) risk from AOD use. Among Anglos, moderate risk rates were similar for both genders (17% vs. 18%), female rates for high risk were half those of males (7% vs. 13%) (Beauvais 1992a*:27-29). The TEC survey also shows important gender differences by location: non-reservation Indian females in the 12th grade had lower rates of getting drunk in the last 30 days than males (32% vs. 47%), while there were only small gender differences for reservation youth (42% vs. 45%) (Beauvais 1992a).

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[5] For example, in the late 1970s, 35% of Indians, compared with 21% of non-Indians, reported getting drunk at least once every two months by the time they were high school seniors. Furthermore, the proportion who had gotten high or drunk during the past two months was higher still: 67% of Indians vs 45% of non-Indians. Almost half (46%) had been drunk enough to stagger, fall, or black out, compared with about a quarter of non-Indians (Oetting, Edwards et al. 1980; Oetting, Beauvais et al. 1980).

Trends

TEC data show that lifetime prevalence of alcohol consumption increased quite sharply between 1975 and 1981 (Oetting, Beauvais et al. 1983). It then generally declined through 1990, although the pattern is uneven: remaining stable at 79%-81% between 1983 and 1987, but dropping to 74% in 1990. In contrast, recent data suggest a possible increasing level of heavy alcohol involvement since 1985, the first year for which data on intoxication is available. This is consistent with anecdotal evidence from treatment workers on reservations that alcohol use is increasing among adolescents.

Tobacco

Most adolescent tobacco research has involved only White subjects or has not provided ethnic breakdowns. It does appear, however, that Native American youth have the highest rates of tobacco use among the major ethnic groups, followed by Whites and Hispanics, who report similar rates. Native American females appear to be the population most at risk of all gender-ethnicity combinations.

Cigarette Smoking

In studies of students in grades 7 to 12, lifetime cigarette smoking rates have been reported as high as 81% among boarding school students (Okwumabua & Duryea 1987*) and among Alaskan Natives (vs. 69% for Whites) (Segal 1992*).

TEC survey data for 1988-90 indicate lifetime smoking rates of 67% for reservation Indians grades 7-12. Among 8th graders, 74% ever smoked, compared to 46% of Whites. Among 12th graders, rates were 80% vs. 62%. Not only was lifetime smoking particularly high but, in contrast to the rates for other drugs, it varied considerably from tribe to tribe. There is no clear explanation for either finding (Beauvais, Oetting et al. 1989; Beauvais 1992a*:5, 26-27).

In both the National Senior Survey and the California Student Survey, Native Americans exceed all other groups in current smoking rates. In the 1991-92 CSS, many more Native Americans (46%) reported cigarette smoking in the previous month than any other group, followed by mixed ethnicity (33%), Whites (31%), and Hispanics (29%) (Skager & Austin 1993). In the NSS, Native Americans also well exceeded all other groups at the rate of 1/2 pack a day (18% for males and 23% for females) (Bachman, Wallace et al. 1991*).

Gender Differences. Regarding gender differences, Native American females generally report higher smoking rates than males and, in multiethnic studies, higher than males or females of any group. In the Indian Adolescent Health Survey, for every grade level after 7th, females were more likely to be daily cigarette smokers than males, rising to 17.8% in high school (vs. 15% for males) (Blum, Harmon et al. 1992*). Among NSS 12th graders, 37% of Native American males reported current (past thirty-days) cigarette smoking, followed by Whites (30%), Mexican Americans (26%), Puerto Ricans/Latin Americans (22%), Asians (17%), and, finally, Blacks (14%). By contrast, 44% of Native American females smoked, more than any group of males. Native Americans also well exceeded all other groups at the rate of 1/2 pack a day (18% for males and 23% for females) (Bachman, Wallace et al. 1991*). Similarly, in the 1991-92 CSS Native American females smoked more than males in any group, 11 percentage points higher than even Native American males (51% vs. 40%) (Skager & Austin 1993).

Trends. The only trend data availble on smoking is that from the TEC survey, which is only available since 1985. The most recent survey results suggest that use of cigarettes may be declining.

Smokeless Tobacco

Studies on smokeless tobacco use that have included American Indians indicate that differences between them and other ethnic groups are even greater than those found for cigarette smoking. In a review of the smokeless tobacco research funded by the National Cancer Institute, Boyd (1987*) concluded that use was highest among Native Americans and lowest among Blacks and Asians. Smokeless tobacco use by Hispanics was comparable to that by Whites. Furthermore, Native Americans were the only group among which females had reported rates of use that were higher than those for males.

The 1988-1990 TEC survey reported lifetime rates of 51% for 7th-12th grade reservation Indians; 65% vs. 19% for reservation Indians and White 8th graders; and 74% vs. 34% for 12th graders).

Smoking tobacco use appears to be especially prominent among Native Alaskans. In the ASS, the lifetime rate of Native Alaskans for smokeless tobacco was particularly high, twice that of Whites (70% vs. 38%) (Segal 1992*). Schinke, Schilling et al. (1987*) examined snuff and chewing tobacco use among 144 Alaska Native and American Indian adolescents recruited from tribal and reservation schools in the Pacific northwest (mean age 12.3). Results showed frequent and early use of smokeless tobacco products. Almost one fifth of all females and close to one half of all males had used snuff or chewing tobacco on more than 20 occasions. Weekly smokeless tobacco use was reported by 34% of all females and by 43% of all males. By product type, 33% of all subjects had used snuff and 28% had chewed tobacco in the past week. Among females, over one half of all subjects had used snuff or chewing tobacco before age 10 years. Among males, nearly one half of the subjects first used one of them prior to 8 years of age. Few subjects had used cigarettes or other smoked tobacco products (see also Schinke, Gilchrist et al. 1986).

Riley, Barenie et al. (1990*, 1991*) studied smokeless tobacco use among 11,057 students (c. 10% American Indian) using a stratified, random sampling of 22 Southeastern, nonurban high schools. Among females, American Indians had the highest rate of having tried it (20%), followed by Whites (16%) and Blacks (11%). They also had the highest severity rating, followed by Blacks and Whites. Among males also, American Indians had the highest rate of lifetime use (72%), followed by Whites (65%) and Blacks (22%).

Among 4,249 9th-graders in the Twin Cities metropolitan area (3,309 Whites, 449 blacks, 90 Asian, 75 Native Americans, and 39 Hispanics), smokeless tobacco use was found to be most common among males and among Hispanics and Native Americans, although the Native sample was small. Native Americans had high lifetime prevalence rates, but past week rates were no higher than those of Whites. Lifetime use rates were: 62% Hispanic, 61% Native American, 46% White, 23% Black, and 21% Asian. Past week use rates were: 31% Hispanic, 12% Native American, 11% White, 3% Black, and 8% Asian. It is suggested that since alcohol- and other drug-use rates have been similar among reservation and nonreservation youth, it may be that smokeless tobacco rates are about to climb sharply among Native Americans living in the city (Murray, Roche et al. 1988*).

In one of the few studies to look at tribal differences, Harris and Ford (1988*) investigated tobacco use among 204 male and female Anglo-American, Hispanic, Navajo and Pueblo 5th graders from 6 rural New Mexico schools. The results suggested that, between the two tribes, Pueblo Indians had a higher level of smoking, whereas Navajo Indians a higher level of chewing or dipping. Of the Navajo, 52% reported chewing, compared to 27% and 13% from the Pueblo sites, and 32% of Hispanics and 25% of Anglos. Boys in all groups reported a greater incidence of smokeless tobacco use than girls, as well as higher levels of both smoking and chewing.

Gender Differences. Smokeless tobacco use among Native American females exceeds that of females in other ethnic groups, but the behavior remains predominantly male. In the Indian Adolescent Health Survey, although females were more likely to be daily cigarette smokers than males, daily use of smokeless tobacco was consistently higher for males (Blum, Harmon et al. 1992*). As noted, both Harris and Ford (1988*) and Riley, Barenie et al. (1990*, 1991*) report much greater use among Native American males than females.

Future Intentions

Foreshadowing these differences in prevalence rates among secondary students are data indicating higher rates of intentions to smoke and use smokeless tobacco in the future by Native American elementary school students. Over 28% of an Indian sample of 4th and 5th graders indicated an intention to smoke in high school, and 36% said they might smoke as adults. The more "generic" school-based sample reported intentions of 1.5% and 2%, respectively. Almost 20% of the sample reported intentions to smoke or use smokeless tobacco in the next 12 months. Intentions to use smokless tobacco in high school and as adults was reported by 21% and 19%, respectively (Moncher, Holden, & Trimble 1990*).

Illicit Drug Use

Marijuana and inhalants are the most widely used illicit drugs among Native Americans. There is much less use of other illicit drugs (May 1986*:188; Weibel-Orlando 1984). Thus, when comparing Native Americans to other ethnic groups, the differences can be quite small, within two to three percentage points even in lifetime use for drugs such as heroin. Even extremely low prevalence rates of these dangerous drugs may have social significance, and a change of just a few percentage points may have significant implications for programs or public policy. But since actual numbers of users of illicit drugs other than marijuana are often very small, meaningful interpretation of findings can be almost impossible. For example, Native American 9th- and 11th-graders in the 1991-92 CSS ($n = 117$) reported the highest rate of LSD use (12%), but this was based on only 14 cases. Despite these limitations, the research consistently indicates that Native Americans have higher rates of use than other groups across most specific drug categories, especially marijuana. Again, gender differences are less pronounced.

This holds true in studies that have measured general levels of drug use other than alcohol or illicit drug use other than marijuana. In the Pacific Northwest, weekly use of drugs other than alcohol was reported by 27% of Indian adolescents, but only 8% of non-Indian adolescents, about the same ratio as found for weekly alcohol intoxication (Schinke, Bebel et al. 1988*:516). In King, Beals et al.'s (1992*) boarding school study, some use of illicit drugs other than marijuana or inhalants was reported for the previous month by 16% of the sample, and 45% of those students had used other drugs 3 or more times in the same period.

In the 1991-92 CSS, use of any illicit drug was reported by 43% of Native Americans and 42% of mixed ethnicity, compared to rates for Whites and other minorities in the mid-30's or lower. The same group ranking occurred among both males and females, but the rate for Native American females (55%) was higher than among any group of males (Skager & Austin 1993).

Marijuana

Marijuana is the next most popular drug after alcohol and tobacco, with several reports indicating overall rates of use among American Indian youth that are double or more those among non-Indians.

For example, May (1986*:188) estimated that about half (41%-62%) of Native American youths have tried marijuana use, compared with less than half (28%-50%) of other youths, although there is wide intertribal variation. Lifetime prevalence rates of 70%-80% have more recently been reported (King, Beals et al. 1992*; Okwumabua & Duryea 1987*; Beauvais, Oetting, & Edwards 1985*; Segal 1992*), at times twice the rate of non-Indians (Beauvais 1992*; Beauvais, Oetting, & Edwards 1985*; Moore 1988; Winfree & Griffiths 1983); and sometimes exceeding the rates for alcohol within the same Indian samples (Beauvais, Oetting, & Edwards 1985*; Okwumabua and Duryea 1987*). Again, gender differences are small, with Native American females sometimes exceeding males of any group.

In the Indian Adolescent Health Survey, lifetime marijuana use ranged from 31% of junior high students to 50% of high school (Boyd, Harmon et al. 1992*). In the urban boarding-school sample surveyed by Okwumabua and Duryea (1987*), lifetime prevalence was actually slightly higher for marijuana than alcohol (80% vs. 79%). According to King, Beals et al. (1992*), 74% of boarding school Indians had tried marijuana, and 47% reported using it at least once a month. Of the monthly users, 58% (24% of total sample) reported that they had used it 3 or more times in the previous month.

Among youth in grades 7-12, 50% of rural Indians surveyed in 1975 by Winfree and Griffiths (1983) had tried marijuana, compared with only 27% of non-Indians. In addition, 28% of Indians were occasional and regular users, compared with 11% of Whites. In the IHS survey, 59% of 7-12th graders in 1985 reported marijuana use, compared with 24% for non-Indian youths (Moore 1988).

Comparative Studies. In the National Senior Survey (Bachman, Wallace et al. 1991*), Native Americans (both males and females) exceeded other groups in annual, current, and current (last 30 days) daily use. Among males, Native Americans had the highest level of current marijuana use at 28%, followed by Whites (25%) and Mexican Americans (22%), with other groups reporting half these rates. Native American males had the same ranking when daily use of marijuana within the past thirty-days was examined. In the 1991-92 CSS (Skager & Austin 1993), rankings for 9th and 11th graders were similar to those of the NSS. Native Americans had the highest rate of marijuana use in the past six months (33%), followed by Blacks (30%), mixed ethnicity (29%), Whites (27%), Hispanics (25%), and then Asians at half the rate of the others (11%). In Alaska, 71% of Natives reported lifetime use of marijuana, compared to 49% of Whites (Segal 1992).

Gender Differences. In the NSS, gender differences were again much less than among other groups. More Native American females reported current use (24%) than did Hispanic, Black, or Asian males. For annual use, Native American females had a higher prevalence (44%) than males of any group (the rate for Native American males was 42%). In the CSS, American females (at 36%) exceeded all others regardless of gender, although the sample size in this survey was small.

Trends. The TEC surveys have also consistently shown use rates for secondary-school Indians more than double those of non-Indians. However, recent results suggest use is declining. The lifetime prevalence in 1982-83 was about 70% (vs. 25% for non-Indians), approaching the level of alcohol (Beauvais, Oetting, and Edwards 1985*; see also Oetting, Beauvais, and Velarde 1982). The 1989-90 TEC survey data indicated use has declined markedly among American Indians, a trend that is found nationally among all groups. Lifetime use was reported by 54% of 7-12th grade reservation Indians, the lowest rate since 1977-78 (use peaked in 1989-81 at 74%). Nevertheless, lifetime use rates remain significantly higher than among Whites, at 47% of 8th graders (vs. 13% for Whites) and 77% of 12th graders (vs. 38% for Whites) (Beauvais 1992*).

Inhalants

A major threat is posed by the popularity of inhalants (e.g. gasoline, paint thinner, spray propellents), especially among the youngest drug users (McBridge & Page 1980; Weibel-Orlando 1984:320; Young 1987*). Few studies specifically deal with the problem of inhalants, but research has indicated high levels of use among young male Native Americans (as well as Hipanics) who live in poor, isolated areas (Beauvais & Oetting 1988*; Mata & Andrew 1988; Frank, Marel, & Schmeidler 1988; NIDA 1987; Watts & Wright 1988). Because of their ready availability and low cost, inhalants are likely to be the first drugs to be abused by young people in these areas who are at risk. Use does generally decline with age and as other substances such as marijuana and alcohol become more accessible.

In the late 1970s, Indian youth were already estimated to be two-to three-times as likely to be involved with inhalants than the general population (Oetting & Goldstein 1979). Lifetime prevalence estimates in the mid-1980s ranged from 17% to 22%, compared with 9% to 11% of non-Indian youths (Wingert & Fifield 1985; May 1986*:188). Recent comparative studies are consistent with this. In the NSS data, 10% of Native Americans males reported inhalant use in the past year, followed by Whites (9%), with other groups generally under 5%. The same rankings occurred for current use. Differences among females, however, were less pronounced and White females generally reported the highest rates (Bachman, Wallace et al. 1991*).

Although some studies show Native Americans with rates higher among males than among females, a study on inhalant use alone (Beauvais & Oetting 1988*) found use rates for 8th-grade females nearly the same as for males. In contrast, 12th-grade females had distinctly lower rates than males. The authors speculate that female users probably had dropped out of school by this age or that females reduced their use very quickly after 8th grade.

In other findings, one-quarter of the boarding school Indian sample had tried inhalants; one-tenth at least monthly (King, Beals et al. 1992). In Alaska, Whites and Alaska Natives secondary students reported the same lifetime rates (27%) (Segal 1992*).

Trends. The declining trend evident for alcohol and marijuana, is less evident for inhalants. In the TEC studies, between 1975 and 1983 a rapid increase in lifetime use from 15% to 32% occurred among Indian secondary students. Among non-Indians, prevalence rates were much lower and did not show a similar increase over time (Beauvais, Oetting, & Edwards 1985*). After 1983, the trend was reversed and use of inhalants among Indians decreased until 1985, although across ages their rates were still higher than among non-Indians (Beauvais & Oetting 1988*). A slight increase was evident again in 1986-1987, rising to 23%-24% through 1988-90 (Beauvais, Oetting et al. 1989*; Beauvais 1992).[6] Currently, lifetime use is still twice that of Whites: 34% for 8th graders (vs. 14% of Whites); and 20% for 12th graders (vs. 10% of Whites) (Beauvais 1992*).

This high prevalence rate is of particular concern because youth who begin drug use with inhalants are more likely to continue serious levels of drug involvement than those whose first drug is marijuana or alcohol (Crider & Rouse 1988:2). Research on inhalant users in general has determined that "at every age, inhalant use marks a very high general level of drug involvement for that age group and suggests potentially serious emotional and/or social adjustment difficulties" (Oetting, Edwards, & Beauvais 1988:197).

Stimulants and Cocaine

The next drug category in popularity appears to be stimulants (Beauvais & LaBoueff 1985:150; Beauvais, Oetting et al. 1989*). Nevertheless, cocaine results are variable: it is the one category in which Native Americans often do not report the highest use, although they are still relatively high. Cocaine rates are generally close between Native Americans, Hispanics, and Whites, and significantly higher than among Blacks and Asians (see, e.g., Watts & Wright 1988).

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[6] See also: Beauvais, Oetting, & Edwards (1985a); Kaufman (1973); Schottstaedt & Bjork (1977).

In their analysis of NSS data, Bachman, Wallace, et al. (1991*) determined that Native American males had slightly higher cocaine rates than Whites (15% vs. 12%), as did Hispanics. The cocaine rate for Native American females was the second highest for any gender/ethnicity combination, indicating again that this is an especially high-risk group. For females, there was a greater range between Native Americans at the high end and Blacks at the low, with other groups bunched in the mid-range. Native American females had an annual prevalence rate of 16%; Whites, 9%; Mexican Americans and Puerto Rican/Latin Americans 8% each; Asians, 6%; and Blacks, only 3%.

In the Alaska Student Survey, lifetime rates for cocaine were lower among Native Americans (12%) than Whites (16%), as were rates for for stimulants (Alaska Natives 15% vs. Whites 27%) (Segal 1992*). In the 1991 CSS, Native Americans also reported relatively low cocaine use (Skager & Austin 1993).

1988-90 TEC Survey data indicated high rates of use among reservation Indians, with lifetime prevalence of 9% among 7-12th graders; 6% for 8th graders (vs. 3% for Whites); and 15% for 12th graders (vs. 8% for Whites) (Beauvais 1992a*). Use among Indian secondary students has steadily risen since the 1982-83 surveys (when it was 6%). In contrst, rates for stimulants in general declined between 1986-87 (25%) and 1988-90 (16%).

Hallucinogens

LSD is very much a White drug, but also surprisingly popular among Native Americans. White NSS seniors, both males and females had higher rates of current LSD use (3% and 1%, respectively) than other ethnic groups except for Native Americans (3% and 2%). For females, only Whites and Native Americans reported more than 0.3% prevalence. Annual prevalence rates also were highest among White and Native American males (7% and 8%). Native American females reported the same rate (7%) (Bachman, Wallace et al. 1991*).

Similarly, TEC data for 1988-89 showed lifetime hallucinogen rates among both 8th and 12th graders were twice as high among reservation Indians than Whites (e.g., 20% vs. 10% for 12th graders). Trend data suggests that use has been rising since 1982-83, from 6% to 12% among secondary school students.[7] Anecdotal evidence would suggest this may be related to the growing popularity of the heavy metal rock scene among Indian youth since the middle 1980s.[8]

Heroin

Heroin rates are very low and significant group differences are difficult to detect, but Native American youth have often been shown to use more than, or the same as, Whites. For male high school seniors, the highest rankings on annual prevalence were Native Americans (1.5%) and Puerto Rican/Latin Americans (1.2%), followed by Mexican Americans (0.9%), then Whites (0.7%) (Bachman, Wallace et al. 1991*). Among the 12th graders surveyed by TEC, fewer reservation Indians reported heroin use than Whites (1% vs. 2%) (Beauvais 1992*:16).

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[7] Unreliable results from the California and Alaska surveys, which had only small samples of Native Americans, were inconsistent. In Alaska, Segal (1992) found that any use of hallucinogens was most prevalent among Whites (16%) compared to Alaska Natives (9%). In California, Native Americans reported the highest rate of LSD use, 12% (Skager & Austin 1993).

[8] Personal communication, Arlan Neskahi, Western Regional Center for Drug-Free Schools and Communities.

Combining Drugs

Once they enter adolescence, Indian youth are more prone than others to use alcohol and other drugs in combination. In the 1988-90 TEC survey, 26% of reservation Indian 8th graders reported using marijuana and alcohol together, compared to 6% of Whites. Rates for taking two drugs at the same time were 9% vs. 4%, respectively. For 12th graders, the reservation Indian rate for using marijuana and alcohol together was twice that for Whites (50% vs. 26%). The rates for taking two drugs simultaneously were slightly higher (14% vs. 10%) (Beauvais 1992*:33-34).

Age of Initiation

AOD use begins at a very early age among American Indians and the age of initiation steadily declined in the 1970s when use was expanding (Beauvais & LaBoueff 1985; Oetting, Beauvais et al. 1983; Weibel-Orlando 1984:327, 1989:273). Many Indian youth (often about a third) begin using alcohol, marijuana, and inhalants between the ages of 11 and 13 (Beauvais and Oetting 1988*; Cockerham 1975; Moore 1988; Moss & Janzen 1980:30;Okwumabua and Duryea 1987*; Olsen & Baffi 1982). Oetting and Goldstein (1979) reported that 12% of Indian youths regularly drank some alcoholic beverage by their 9th birthday. In a study of seven different reservations, over 33% of youth between age 9 and 12 reported alcohol use (Beauvais & LaBoueff 1985).

The TEC surveys have consistently revealed that Native Americans use most drugs earlier than other groups. One exception appears to be alcohol—but once they start drinking more Indian youth appear to accellerate into heavy drinking patterns (Beauvais, Oetting, & Edwards 1985). Data from the 1982 and 1984 surveys indicated that about 25% of both Indians and non-Indians had became drunk for the first time prior to age 13. Another 15% were first intoxicated between ages 13 and 14. The initiation curves for Indian and non-Indian youth were remarkably similar up to age 15. Although more Indians than non-Indians tried alcohol before the senior year, Indians and non-Indians experienced intoxication for the first time at about the same age. However, after age 15 the intoxication acquistion curve continued to rise among Indians but tapered off among non-Indians. Furthermore, once they have been drunk Indians tended to get drunk more often, with the divergence increasing after age 15 (Oetting & Beauvais 1989*:245-247).

Among youth surveyed by TEC in 1988-90, differences between Indian and Anglo youth in average age of initiation of alcohol intoxication, marijuana use, and inhalant use were generally small. However, Indian youth showed a pattern of earlier initiation of the illicit drugs and the early stages described by gateway theories did not hold up well for them. By the time they were 12 years old, 21% of reservation Indians had tried marijuana, compared to only 5% of Anglo. Inhalants were often the first drug used. Age of first alcohol use was the same for reservation youth and Anglo youth, probably due to the lack of availability of alcohol on many dry reservations. Indian youth may get drunk for the first time well after trying marijuana or inhalants (Beauvais 1992a*:21-22).

High-Risk Use

When reservation Indians were categorized by Beauvais (1992*) in terms of their risk status based on overall patterns of AOD use, the proportion of reservation Indians at high or moderate risk greatly exceeded Whites,. About twice as many Indian youths were at high risk. Among 8th graders, high-risk rates were 10% for reservation Indians versus 3% for Whites; rates for moderate risk were 33% vs. 10%. Among 12th graders, high-risk rates were 15% vs. 10%; moderate risk, 39% vs. 18%. Thus, about 54% of 12th-grade reservation Indians were at some risk, compared to 28% of Whites, and the differences were even greater for 8th graders (43% vs. 13%, respectively). Non-reservation 8th-grade Indian youth were intermediate in drug use between Whites and reservation Indians: 8% are at high risk from their drug use..

Non-reservation 12th graders included more high risk users (19%) but fewer moderate risk users (21%).

Trends. Among reservation Indian secondary students in general, the rates of high-risk status have been relatively stable at around 20% since 1977-78. In contrast, those categorized at moderate risk have declined gradually since 1981-82 and those at low risk or reporting no drug use have risen over the same period, from about 45% to 62%. This suggests that the reductions in use that have been observed for individual drug categories have been due to a decline in use among occasional users, with little inroads among those at highest risk (Beauvais, Oetting, & Edwards 1985; Beauvais 1992a*:11, 19-20).

Use Consequences

In 1984, it was established that the direct out-of-pocket cost of AOD use for reservation youth was $8.3 million, a tragic loss to an economy already impoverished (Loretto, Beauvais, and Oetting 1988). This did not take into account the economic costs from use-related accidents, lower productivity, school failure, etc.

May (1982) found no evidence to determine conclusively whether Indian adults used alcohol more or less than non-Indians. However, he speculated that the styles of drinking, particularly very heavy drinking, among Indians may lead to the much higher rates of alcohol-related problems. Given that Indian youth generally report heavier AOD use than non-Indian groups, not unexpectedly, they also report higher rates for drug-related problems and negative consequences. Heavy drinking has been called the main reason that one in two Indian students never finish high school (Trimble, Padilla, & Bell 1987*:3). Blum, Harmon et al. (1992*) reported that, as the quantity and frequency of drinking increased among Native American youth, so did the adverse correlates. Problem drinkers were most likely to have sustained an alcohol-related or drug use injury, experienced school problems or had family problems associated with AOD use, or ever have attempted suicide.

In the TEC survey, Indian youth have higher rates than Anglos of using alcohol and drugs in ways that increase their risk—such as getting drunk, drinking while driving, and using drugs and alcohol together—as well as frequency of self-reported consequences from AOD use. For example, 15% of reservation seniors have been involved in an alcohol-related accident. The most frequent negative consequences involved relationship problems. Indian youth are almost three times as likely as non-Indian to have gotten a traffic ticket because of alcohol use and to have been in a car accident because of AOD use. (Beauvais 1992*:33-39, 1992a*; Beauvais, Oetting, & Edwards 1985; Oetting & Beauvais 1989*:241-242)).

Reservation vs. Nonreservation Youth

Almost all AOD research on Native American has been conducted among reservation Indians, yet fully one-half of Indian people now live in cities, in part because of high unemployment and a lack of opportunities or hope on most reservations (Beauvais & LeBoueff 1985:144). Weibel-Orland's (1984, 1989) research has shown that among adults urban Indians have unique patterns and problems surrounding use. Rural Indian communities had a heavier, binge-drinking alcohol consumption pattern than urban communities, where use is more frequent. The high mobility between reservations and cities may be an important factor in the supply of drugs that needs to be investigated (Beauvais 1988; see also Mail & McDonald 1980; Williams 1985).

Only a few youth studies have specifically examined urban or nonreservation populations (e.g., Murray, Roche et al. 1988; Okwumabua & Duryea 1987*), although others have included them without examining geographic differences (e.g, Gilchrist, Schinke et al. 1987*). In the only study to compare reservation and nonreservation Indian youth, Beauvais (1992a*) determined a consistent, "intriguing" pattern showing the lowest rates of use among Anglo youth, higher rates among non-reservation Indian youth, and the highest rates among Indian youth on reservations. An estimated 40% of nonreservation Indian 12th graders were assessed as at some risk due to their substance abuse (vs. 50% reservation Indians and 28% White). The greatest difference between reservation and nonreservation Indians was for smokeless tobacco (used by 74% of reservation Indians vs. 43% of nonreservation Indians) and marijuana (77% vs. 58%, respectively). There were, however, some variations: nonreservation Indians were slightly higher than reservation Indians for legal stimulants, heroin, other narcotics, downers, qualudes, and tranquilizers—all drugs which are arguably more readily available in urban settings.

These differences also were evident across genders. Among 12th-grade reservation Indians, the same proportion of both genders were categorized as at high risk; among nonreservation Indians, female rates were half those of males (12% vs. 25%). This was also the case with Anglos (7% for females vs. 13% for males), although nonreservation Indian males and females were both at higher risk than either Anglo gender. Thus, among males in all three groups, nonreservation Indians were at highest risk; among females, reservation Indians (Beauvais 1992*:29). The same pattern was found for consequences of use, indicating that it is the type and amount of substance use that is the proximal cause of substance use consequences.

Discussion

Although some recent trends are encouraging (e.g., declines in alcohol, marijuana, and stimulant use), data are fairly consistent in showing across age categories and use measures that Native Americans report the highest prevalence rates of all ethnic groups, frequently at rates twice those of White or non-Indian comparison samples. Rates of use of tobacco (both smoked and smokeless), marijuana, and inhalants are especially high for Indian youth. Ethnic group differences are less pronounced for rates of drinking per se, but Native Americans exceed other groups in measures of heavy, frequent, or problem drinking. Furthermore, the TEC surveys suggest that the reductions in alcohol lifetime prevalence since 1985 have been uneven and that level of alcohol involvement of reservation-based Indian youth may be increasing. Reflecting this, both reservation and nonreservation Indians exceed Anglos in the proportion categorized at high and moderate risk. More than 50% of reservation seniors and 40% of nonreservation appear to be at some level of risk from AOD use. Furthermore, few inroads appear to have been made among the high-risk users (Beauvais 1992*).

Trends in overall drug use between 1975 and 1990 among TEC-surveyed Indians and non-Indian youth surveyed by the National Household Survey (NIDA 1991) and the NSS have generally followed similar patterns. Substance use increased from 1975 to the early 1980s and, for the most-used drugs, has declined since then. This common pattern is clearest for marijuana and stimulants. Alcohol use trends are also similar. In contrast, rates for cocaine and hallucinogen use by Indian youth increased until 1990, while declining among non-Indians, possibly because changes in the use of some drugs by Indian youth lag behind the national trend or supply patterns have changed (Beauvais 1992*:4-8; Oetting & Beauvais 1989*). Analysis of NSS data indicates that changes in consumption within Native Americans and the other major ethnic groups followed those for seniors as a whole (Wallace, Bachman et al. 1991*).

Far more attention needs to be directed toward differences between reservation and nonreservation Indians. The data reviewed here suggest that reservation Indian youth have higher use rates for the most common drugs than nonreservation Indians and are more involved in use-related problems. However, the variations in use across different drug categories may need to be taken into consideration in prevention programs targeting these two groups. *It might also be important to* distinguish between Indian youth who are permanent urban residents and those who move back and forth from the reservation. The latter may have drug use rates more like those of reservation youth. If so, and if about half of the urban sample are part-time reservation residents, then other urban Indian youth may not be much different from White youth.

Similarly, attention needs to be directed toward youth in boarding schools, who constitute about 15% of the student population, generally youth who have failed in other school settings. The boarding school Indians surveyed by King, Beals et al. (1992), Dick, Manson, and Beals (1993*), and Okwumabua and Duryea (1987*) reported some of the highest rates of use.

A problem consistently encountered within the ethnic-specific AOD literature is that use patterns are often not reported by gender; or sometimes findings by age and gender are confounded. Of the studies reviewed here, only Bachman, Wallace et al. (1991*), Skager and Austin (1993), and Beauvais (1992a) engaged in extensive gender comparisons. Female adolescents in general use less of most substances than males at all age ranges (Bodinger-deUriarte & Austin 1991). However, the research suggests that Native Americans are the main exception across drug categories. They exhibit fewer gender differences than other groups. Indeed, several studies in several drug categories, Native American females reported equivalent or higher rates than males.

Finally, as high as the rates of use reported above are, they may actually underestimate the total prevalence of use among Native American youth because they are restricted to student samples and under-represent dropouts. There is a strong association between dropout status and greater drug use, although this association is not simple. Dropouts and youth at risk of dropping out report much higher rates of use than students generally (Austin 1992; Austin & Horowitz forthcoming). Little attention has been paid to ethnic differences in AOD use *among dropouts, but they do appear to* mirror the differences found among youth remaining in school (Austin & Pollard 1993). However, differential dropout rates need to be taken into consideration in comparing AOD use among ethnic groups.

Native Americans, as well as Hispanics, are over-represented among dropouts (Pallas 1986; Pallas, Natriello, & McDill 1989; National Center for Educational Statistics 1989). Native Americans have the highest dropout rates of any ethnic group, in large part due to their poverty.[9] Dropout rates in some urban areas among 8th and 9th graders range from 48% to 85%, and approach 50% in BIA boarding schools and reservation day schools (Fleming 1992:168). Dropping out of school within the general population and across ethnic groups has been shown to be correlated with higher levels of use. Because of the early onset and high rates of AOD use among young Native Americans, AOD use in itself may be a contributing factor to the higher rates of dropping out among them. This would suggest that, if dropouts were taken into consideration, prevalence rates of the most common drugs among Native Americans would be even higher relative to other groups (Bachman, Wallace et al 1991*; Oetting & Beauvais 1989*:391).

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[9] It should be emphasized that ethnic differences in dropout rates are largely attributable to socio-economic differences. One of the most common indicators of risk for school failure is poverty status (Pallas, Natriello, & McDill 1989). SES is the strongest predictor of educational achievement in preschool (Slavin, Karweit, & Madden 1989:5). In the 1982 High School and Beyond (HSB) dropout survey, 24% of the lowest fifth of the income distribution dropped out of high school, compared with 11% in the other four-fifths. The lowest-income students were thus twice as likely to drop out of school (Natriello, McDill, & Pallas 1990:21). The difference was even greater when extremes of SES levels are compared. Eckstrom, Goertz, et al. (1986) report that 25% of low SES teenagers in the HSB survey dropped out between the sophomore and senior years, compared with 8% of those of high SES. Finally, when family economic status was controlled, the dropout rates of Blacks and Hispanics showed little difference from those of Whites (Rumberger 1983, 1987).

USE CORRELATES AND RISK FACTORS

What makes Native American youth so much more susceptible to AOD abuse than other groups? To what extent do the same factors influence both Indian and non-Indian youth? What explains why, despite such high levels of use among Native American youth, many do avoid it? Our ability to answer these questions and explain this phenomenon has lagged far behind even our knowledge of epidemiology (Oetting, Beauvais, & Edwards 1988*:87). The etiology of AOD abuse among Native American youth is complex and multifactorial, and no consensus has emerged. As Trimble, Padilla, and Bell (1987*:5) observe, "There are no universal and all-encompassing explanations for drug and alcohol abuse among American Indians, much less for developmental life stages within a group" (see also OSAP 1990:40). However, our understanding of the dynamics of AOD abuse among Indian youth has improved considerably over the past decade.

Among the theories that have been offered, it has been speculated that contemporary use among youth is related to traditional Indian patterns of drug use. However, such traditional uses were under carefully controlled ceremonial conditions. There is no Indian tradition of recreational drug use, even of tobacco (Beauvais 1992:53). In one possible exception, Segal (1992*:307-308) suggests that the high prevalence of smokeless tobacco use among Alaska Natives may be related to cultural influece of their "chewing culture." They have a long history of gnawing on long bones and hides and the introduction of smokeless tobacco to the Native culture may have provided a means of modeling the western culture as well as preserving a cultural tradition of their own."

Nor is there evidence to support that Indians have any significantly greater genetic susceptibility to addiction (see May 1989 for a review). It is unlikely that future research will reveal any major link between genetic factors and AOD use among Indian people. Even if some small link were to be found, this can have little to do with substance use among adolescents, who generally have not been exposed to AOD use long enough to become addicted. Besides, there are too many other factors that underlie use.

Rather, the evidence indicates that many etiological influences are the same for Indians and non-Indians and that "high levels of drug and alcohol use are not the result of anything inherent in Indian tradition" (Beauvais & LaBoueff 1985:155; Beauvais 1992*; Query 1985:489, 495; quotation by Gilchrist, Schinke et al. 1987*:871-872). The higher rates among Indian youth are most like the results of more extreme predisposing conditions. Among the implicated factors are peer group encouragement, laissez-faire childrearing practices, conflicts between cultural ideals and behavioral realities, parental and community attitudes about alcohol and other drug use, concomitant adult-use models, and, most importantly,socio-economic stresses which disrupt healthy child development—and most importantly socio-economic stresses which disrupt healthy child developments, all of which have been shown to be associated with AOD abuse in other populations as well.

Beauvais (1992*:57-61) has constructed path analysis models illustrating how socialization characteristics are similarly linked to drug use among both Indian and Anglo youth. These models show that the most important factor in determining drug use among both groups is whether an adolescent is involved with drug-using friends ("peer drug associations"). The next two most influential factors were school adjustment and family sanctions against drugs. Both models further suggest "that having a strong family can be the basis for both of these factors: the strong family is likely to provide support and encouragement for its children to improve school adjustment, and the strong family is likely to provide strong sanctions against drug drug use" (p. 58).

These school and family factors help determine whether an adolescent will build relationships with other young who use drugs. As Oetting and Beauvais (1987, 1989*) observe, an AOD-abusing peer group or cluster does not appear suddenly and mysteriously to lure a youth into use. Contrary to the popular perception of peer pressure, which implies that the youth is a passive recipient and that peers push the youth into using alcohol and drugs, a peer cluster includes the youth and that each member plays an active part in encouraging alcohol or drug use. Most youth in an alcohol-abusing peer cluster joined that cluster because they shared an underlying susceptibility to alcohol abuse with other members. In other words, youths choose to become members of particular groups and a wide range of psychosocial factors help explain whether they choose a group that is characterized by AOD use.[10]

The recent decline in consumption among Native Americans would appear related to the same broad societal forces that have been producing declines in adolescent drug use in the general population and other ethnic groups (Oetting & Beauvais 1989*; Beauvais 1992*; Wallace & Bachman 1991*). Nevertheless, there are still differences in the relative influence of some variables for Native Americans compared to Whites or other groups that do help account for these high rates. A more comprehenensive understanding is needed of how the factors that influence AOD use among Native Americans are similar or different to those that influence use among the mainstream population. This is especially important in order to better determine how programs developed for the mainstream may need to be modified to be more effective among Native Americans. To this end, in the remainder of this section we will review the evidence regarding specific variables.

SES/Background

Most discussions of the causes of substance use among Native Americans emphasize the importance of the lack of opportunity and the many adverse life conditions (e.g., poverty, unemployment, and discrimination) that they face. More than any other population group, Indian youth face greater uncertainty and integration problems and suffer more severely from poverty, poor school adjustment and failure, unemployment, antisocial behavior, criminal arrest, increased morbidity and mortality, lack of opportunity, feelings of uncertainty, hopelessness, and despair, and family breakdown.[11] The Native American "is the most severely disadvantaged population within the United States" and in their adolescence they are profoundly alienated and depressed, with high emotional disorder rates, including delinquency, learning and behavior problems, and suicide (Yates 1987:1135-1136). Nearly twice as many Indian teens live in poverty compared with other ethnic groups. Indian youth also have nearly twice the death and suicide death rates (IHS 1990). The unemployment rate on reservations can be as high as 80%; the chances for higher education are low (Oetting & Beauvais 1989*). As Beauvais (1992:52) summarizes: "Drugs may be dangerous, and they may prevent one from achieving in the future; but when the future looks this bleak, why not get drunk? Why not take drugs?" Under such conditions, the immediate rewards of AOD use may outweigh any awareness of future problems that might result.

Considerable controversy surrounds the question of the influence of SES level of adolescent AOD use, in large part because general population surveys have not shown SES to be a powerful indicator of use. High levels of use have been associated with both poverty and wealth, and a certain amount of money is necessary to afford regular drug use (Maddahian, Newcomb, & Bentler 1986). Some variance in the findings regarding SES may reflect the absence of dropouts from most surveys, since dropping out is associated with poverty. However, there is also strong evidence associating Native American AOD use with deprivation.

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[10] On the peer cluster theory, see Oetting and Beauvais (1987).

[11] Beauvais & LaBoueff (1985); Edwards & Edwards (1988*:105); Jones-Saumty, Hochaus, & Zeiner (1983); May (1986*); Schinke, Botvin (1988*:87); McBride & Page (1980:480) Malone (1985); Oetting, Beauvais et al. (1983); Oetting, Beauvais, & Edwards (1988*); Trimble (1984); Weibel-Orlando (1984) Winfree & Griffiths (1983).

Wallace and Bachman (1991*) analyzed the data from the NSS project from the years 1985-89 in order to determine the effect of background and lifestyle factors on ethnic differences in alcohol, tobacco, marijuana, and cocaine use. Background variables included: (1) a mean of the father's and mother's education (used as a measure of socioeconomic status); (2) the number of parents in the home; (3) geographic region; and (4) urbanicity. The results indicated that the often sizable ethnic differences in drug use between Whites and most minorities were not largely the result of these background factors. The one exception was for Native Americans. Wallace and Bachman (1991:351*) conclude: "The relatively high rates of drug use among Native American youth seem completely explainable in terms of these youths' relatively disadvantaged background." Moreover, it would appear that if the background status of Black and Hispanic youth were more comparable to that of Whites, their levels of use might be even lower.

Similarly, Oetting and Beauvais (1989*) determined that, although the correlations were low, family economic and education status related significantly to alcohol involvement for both Native American and non-Native populations: if the family had a better income, the youth was somewhat less likely to get involved with alcohol.

For inhalant use, the isolation and adversity of Indian life may play an especially significant role. Nationally, the highest prevalence of inhalant use is found in relatively isolated communities such as Indian reservations or small Hispanic communities (Crider & Rouse 1988:2). Inhalants "appear to be used more often in enclaves of disadvantaged populations where there is a large degree of physical and social isolation" (Beauvais & Oetting 1988a:30).

Risk Factor Exposure

Related to this deprivation factor, what most clearly accounts for the high abuse levels among Native Americans compared to other ethnic groups are not differences in kind or in the etiological process itself but differences in the number and degree of etiological influences and risk factors experienced by what is the most disadvantaged population in the United States (on this, see Gilchrist, Schinke et al. 1987*; Edwards & Edwards 1988*; May 1986*; Schinke, Botvin et al. 1988*; Oetting, Beauvais, & Edwards 1988*). Evidence that there are numerous pathways to substance use and abuse has led to the development of a risk-factor approach, which hypothesizes that with increased exposure to those factors known to be associated with drug use, there is an increased chance of drug use or abuse occurring, even when a single factor by itself may not be a powerful predictor (Bry, McKeon, & Pandina 1982; Bry 1983; Newcomb; Maddahian, & Bentler 1986; Newcomb, Maddahian et al. 1987*; Maddahian, Newcomb, & Bentler 1988*).

In other words, to a certain extent, ethnic differences in AOD use rates may not be due to qualitative differences in use correlates but quantitative; that is, the differences in the number of risk factors to which youth are exposed. Native Americans report such high rates because they are exposed to so many risk factors, a situation resulting from the persistent and deep sociocultural and economic problems that have plagued Indian history and life in the United States. This may explain the observation made by Welte and Barnes (1987*:334) that "heavy drinking among American Indian youth is difficult to explain in terms of poverty or threats to cultural identity because drinking among Hispanic and Black youth is not unusually high. Some circumstances unique to American Indians must be used as explanations." That unique circumstance may be the sum total of risk factors that they experience for generations. Indeed, given the bleakness of much American Indian life, an equally important question is what characteristizes those resilient American Indian youth who avoid getting involved in AOD use.

Consistent with this, Newcomb, Maddahian et al. (1987*) determined that the more frequent drug use among California American Indian adolescents than among Asians, Blacks, Hispanics, or Whites was largely due to their being exposed to significantly more risk factors. Moncher, Holden, and Trimble (1990*) found systematic and strong correlations between the presence of 16 risk factors and the lifetime prevalence of a number of substances, including alcohol, cigarettes, cocaine/crack, inhalants, and marijuana. The smallest correlation was for lifetime cocaine/crack is consistent with the high frequency of tobacco use in this young sample and more limited use of cocaine/crack, and the largest for alcohol and tobacco.[12]

Cultural Identity

As Trimble, Padilla, and Bell (1987*:2) observe, "Indians persist both as heterogeneous cultural groups and as a separate segment of American society" (see also May 1986*:192). A consistent theme in the literature is that the extent of AOD use among Native American youth is heavily influenced by the extent of cultural dislocation or lack of integration into either traditional Indian or modern American life. Acculturation stress theories hold that Indians are trapped between these two cultures, which causes stress that leads to drug use. Recent research does support that Indians who are comfortable with both Indian and mainstream culture are the least prone to drug abuse; however, it has called into question many assumptions about the role of acculturation and cultural identity.

May (1982) found evidence indicating that youths from well-integrated tribes in which Indian cultural identification was strong were less apt to abuse substances. Involvement in Indian culture would appear to be a protective factor. Furthermore, youth who are biculturally competent–who have an ability to adapt comfortably both Indian and non-Indian values–appear to be at lowest risk. Oetting and Beauvais (1982) observed the highest levels of use among those who were most closely identified with non-Indian values (acculturated) and the lowest levels among those who were bicultural.

In a new theoretical contribution in this area, Oetting and Beauvais (1991*) argue, based on analyses of TEC survey data from Anglo, Native American, and Hispanic youth, that identification with different cultures is orthogonal—that increasing identification with one culture does not require decreasing identification with another. The transition between cultures does not have to be accompanied by high levels of stress. Thus, it is essential to assess identification with any culture independently of identification with any other. Furthermore, identification with any culture—either the traditional or the mainstream—may serve as a source of personal and social strength. However, their data indicated that this greater strength did not translate automatically into less drug use, possibly because drug use is related to how much a person's culture approves or disapproves of drugs compared to peers in other cultures. They conclude that "there are no simple relationships between drug use and cultural identification and in order to relate cultural identification to behaviors such as drug use, we will have to examine specific subgroups and take local cultural content and other environmental situations into account" (p. 678).[13]

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[12] Unfortunately, the authors did not provide a detailed description of what specific risk factors were most associated with what specific substances. Nor is the actual level of AOD use specified.

[13] Their research further indicates that cultural identification can be assessed with six items that they have developed and successfully used in their multicultural research.

Regarding Native Americans, TEC data suggests that most youth are moderately bicultural; they have a mid-range identification with both American Indian culture and White-American culture, and "with some exceptions, most youth seem to be handling the tasks of dealing with two cultures reasonably well." Contrary to acculturation stress theories, the evidence further suggests that adolescent Indian AOD use is not related strongly to anxiety and depression (Beauvais 1992a*).

Family Influences

Family Sanctions

Another frequently identified risk factor is a lack of clear-cut sanctions against use or even public drunkenness among Native Americans (Oetting, Beauvais, & Edwards 1988*; Schinke, Botvin et al. 1988*:87; Swanson, Braatrude, & Brown 1971). Growing up in an environment in which substance abuse among adults is normative, Indian youth may not regard it as deviant but rather as a sign of adulthood (Edwards & Edwards 1988:105; Schinke, Bebel et al. 1988*:516).

Reflecting this lack of clear-cut sanctions, Finely (1989*) determined that, despite their high rate of drinking, not one Indian secondary school student in his sample had encountered social criticism of their drinking two or more times in three potential areas (school, parents, dates, friendship, drinking and driving). The frequency of being with a drinking driver was also more prevalent for Indian students. Indian parents were 10% more likely than non-Indian parents to be the source for obtaining alcohol.

Nevertheless, sanctions against AOD use among American Indians families and communities are not lacking and can be an important factor in preventing use. Oetting and Beauvais (1989*) report that when Indian youth believed their families would try to stop them from drinking and getting drunk, they were less likely to get involved in peer clusters that use alcohol heavily. Indeed, Indian youth appear to be even more influenced by the presence, or lack of, family sanctions than Whites. In Beauvais' (1992*) path models, both White and Indian youth were strongly influenced by the extent of family sactions against AOD use. However, there were differences in degree. Among Indians, family sanctions had a direct effect on AOD use as well as an indirect effect through peer drug associations. For Whites, there was no direct effect but only an indirect effect.

This evidence is provocative. There appears to be a disjunction between the general norms against AOD use by youth that exist within both traditional and fundamentalist Christian Indians and the actual behavior of youth as well as adults. What causes this warrants further explication. Beauvais (1992*:58) suggests that the problem among some Native American families is not be a lack of disapproval of use among youth but rather a failure to effectively communicate that disapproval. "Nearly every Indian family is against drug use, " he observes, "but some families get this message across to their children better than others."

Removal from family sanctions may also help explain the high rates of use among Indian boarding school students. Youth in these schools are separated from their families for much of the year and, as a result, separated from family monitoring of their behavior and family sanctions against their use. Boarding school students are also not likely to impose strong sanctions against AOD use by their friends (Beauvais 1992*:52).

Family Modeling

Related to perceived sanctions, is the influence of AOD consumption within the family itself. Regarding alcohol, Leland (1980) has stressed the need to look at the association between the children's attitudes and behaviors and their parents' consumption. Weibel and Weisner (1980) determined that there is a statistically significant relationship between high levels of drinking in the family of origin and alcohol abuse in later life (Weibel 1982:350). However, in another study

Weibel found relatively little drinking in the childhood homes of later heavy drinkers, apparently because they were raised by grandparents (Weibel-Orlando 1986/87:11). (On adults as role models, see also Swanson, Bratrude & Brown 1971; Query 1985.)

In Moncher, Holden, and Trimble's (1990*) survey of 4th and 5th graders, over 40% of fathers, mothers, and other relatives smoked cigarettes. Particularly alarming, almost 16% of the subjects reported having been given smokeless tobacco by their parents or primary caretakers and 23% by family friends. Cigarettes were given to almost 7% of the sample by their parents and 16% by other relatives and family friends. Their data also indicate substantially higher sibling tobacco use rates than were reported by the more demographically representative school-based sample. Over 14% of the Indian sample reported brothers who smoked, in contrast with only 5% of the generic sample. Over 16% of the Indian subjects reported sisters who smoked, three times the number in the non-Indian school-based sample, and almost 10% reported sisters who had used smokeless tobacco.

Among high-school students in the multi-ethnic survey of smokeless tobacco use by Riley, Barenie et al (1990*, 1991*), modeling influences and use of other substances were the strongest predictors of initial use among females. Separate analyses on American Indian, Black, and White subgroups suggested that factors associated with initial use among females were similar but that substantial differences exist between subgroups on risk factors for level of smokeless tobacco use. For American Indians, the substance-use factor retained the greater predictive power among both genders but the modeling factor also had a strong relationship to level of use. The modeling factor had the greatest predictive power among Native American females for level (severity) of use but it was not a significant factor for White females. Among males, the modeling factor was among the strongest predictors of both trying smokeless tobacco and level of use.

Family Stability, Strength, and Support

Another strong influence that has been identified is the degree of stability of the home and family (Garcia-Mason 1985; Longclaws, Barnes et al. 1980; Oetting, Beauvais, & Edwards 1988*; Red Horse 1980; Swanson, Bratrude, & Brown 1971; Thomas 1980). Family composition (one vs. two parents at home; intact vs. broken) may not be as important as family caring and support. That support can be provided by one parent or by the extended family. This may be one of the most important resiliency factors for Indian youth. The more caring and support there is, the more likely the family is to communicate strong sanctions against AOD use (Oetting & Beauvais 1989*; Beauvais 1992a*).

In the Indian Boarding School Survey, family support had the strongest association with drinking patterns (Dick, Manson, and Beals 1993*; King, Beals et al. 1992*). Perceived family support was negatively related to life stress, which in turn was significantly related to depression and to measures of substance use in four categories (alcohol, marijuana, inhalants, and other drugs). The authors speculate that Native American youths may use social support differently than do other youth, and the boarding school setting may also affect the reliance on family and social support.

School Influences

Like other youth, Indian youth who are doing poorly in school and/or who dislike school are much more likely to get involved with drugs (Austin 1992) This provides an excellent example of a risk factor that holds true for both Indian and non-Indian youth: poor school adjustment is an equally important factor for both. But Indian youth are much more likely to have school problems, as reflected in their extremely high dropout rates. So while the risk factor is the same, it creates risk for many more Indian youth. Oetting and Beauvais (1989*) also found evidence of a protective effect for school success, among Native Americans and others.

The unique experience of Indian boarding schools also appears to heighted AOD use risk, partly because many youth in these schools have already failed in other schools and partly because they are further detacted from their families and communities and isolated in a like-minded peer culture.

Peer Influences

Related to the lack of family and community sanctions against use, a number of researchers on Native American youth have found strong peer-group support for drug use, which has also been shown to be an important, if not the primary, influence on drug use among American youth in general (e.g., Cockerham, Forslund & Raboin 1976; McBridge & Page 1980; Oetting & Goldstein 1979; Vanderwagen, Mason, & Owan 1987:19). In fact, Weibel-Orlando (1984:320-321) concluded that "peer attitudes, modeling by siblings, and peer acceptance are probably the greatest determinants of [drug] use among younger [Native American] populations." Carpenter, Lyons, and Miller (1985*:300) observe that "rapid alcohol consumption is normative among Indian drinkers and this pattern extends to adolescents, who begin to drink in peer groups where drinking is not only sanctioned but expected." For marijuana, Winfree and Griffiths (1983) found that perceptions of the extent of peer use was the primary influence.

Beauvais (1992a*) determined that peer drug associations were the most powerful influence on use among both Whites and Native Americans. In the TEC research, Oetting, Beauvais, and Edwards (1988*) measured "extremely high" relationships between peer associations and alcohol involvement. Beauvais and LaBoueff (1985:153) characterize the problem regarding drugs as a dual condition of having both many peers who encourage use and many others who do not stop someone from using.

Along with this similarity in the role of peer influences among Indians and Whites, important differences still appear to exist between them in the nature and strength of these influences. Beauvais (1992*) emphasizes the difficulty of disentangling the influence of peers from the family among Native Americans. What is unique about Native Americans is that their peer cluster is often made up of same-aged relatives, including close-aged siblings and aunts and uncles. Because they are more physically isolated on the reservation, it is often difficult for Indians to get together with friends and it is more likely that they depend on similar-age relatives for shared activities. These kinship ties make the influence of peers more complex among Indian youth. Thus, direct peer influences may not be quite as strong among reservation Indians as with other youth. This may further explain why, in their path models, the family has a direct effect on drug use which is not evident among Anglo youth.

Alternative Activities

AOD use has been related to the very large amounts of free time that reservation Indians experience and the lack of recreational and entertainment resources. Under these conditions, drugs are used as a way to cope with boredom (Edwards & Edwards 1988*:105). Binion, Miller et al. (1988*) found that Indians reported significantly higher response rates for all the use rationales relating to boredom than did non-Indians as being important for why they use alcohol and marijuana. They also tended to report slightly higher endorsement of the importance of sensation seeking and, for alcohol, significantly higher endorsement of loneliness. In a 1982 TEC survey, nearly 30% of Indian youths stated that they use alcohol in part because "there is nothing else to do around here" (Oetting & Beauvais 1989*:264).

Availability & Historical Context

Availability does not have a major effect on use without the motivation to use (Beauvais 1990*, 1992*). However, the relatively easier availability of inhalants to younger students may help explain their popularity among this age group. More important, the historical and current restrictions on alcohol availability have contributed to the growth of heavy drinking patterns among both Indian adults and youth. It is important to consider the unique contextual or environmental differences between Indians and other groups that may affect how alcohol is used and viewed.

Because of both historical and contemporary prohibition, the availability and distribution of alcohol among Indian youth who live on reservations is quite different from the rest of the United States. Until 1953, Federal law prohibited the sale of any type of alcoholic beverage to Indian people on or off the reservation. As a result, a pattern of drinking developed in which alcohol was consumed surreptiously and quickly in large amounts. This pattern persists despite the repeal of the federal ban. Many reservations have continued to prohibit the sale and/or possession of alcohol within reservation boundaries, and even in those which not do, alcohol traditionally is not kept in the homes and often physically not readily available. These restrictions lead to clandestine activities to obtain alcohol, including thriving bootlegging operations and routine "runs" to reservation border towns to purchase and/or consume alcohol. Reservation youth do find alcohol somewhat more difficult to obtain than do non-reservatin Indians, which explains why their frequency of use is lower (e.g., daily use) and why they drink more in a shorter period of time when they do obtain it. This situation also partly accounts for the high rate of drunk driving incidents among Indian youth. Many youth make a long drive to get to where they can obtain alcohol or other drugs or to reach facilities to "hang out" after they have consumed the drugs (Beauvais 1992*:33, 35, 39; Oetting & Beauvais 1989*:241-242).

This historical context further seems to have affected how Native Americans view drinking. Oetting and Beauvais (1989*) argue that the selective banning of sales and use within this particular ethnic group reaffirms the long-standing stereotype that Indian people are not responsible with alcohol, and causes some resentment toward a policy that, based on ethnicity alone, grants rights to some people, but not others. People who are told continually that they are not capable of controlling their behavior regarding alcohol may in time begin to believe it in a self-fulfilling prophecy. As a result, Indian youth seem to develop some peculiar attitudes about drinking and about their own ability to make choices about their behavior, some believing that they must drink in order to be "real Indians." Conversely, other Indian youth reject the concept of the "drunken Indian" and do not want to be alcoholics. In an interesting piece of adolescent logic, many Indian youth laugh at the behavior of "skid row" type of alcoholics but insist that their own similar behavior is entirely different.

Knowledge & Attitudes (Perceived Harm)

Differential knowledge about AOD use and its effects would not appear to account for the observed variations in use across groups. Moncher, Holden and Trimble (1990) found their Indian sample did not report significantly different knowledge of tobacco use from the non-Indian school-based sample. They conclude that "this strengthens the inference that behaviors regarding use of tobacco products are normative and pervasive in the Indian sample."

Attitudes, however, do appear to differ. Congruent with their higher rates of AOD use, Indian youth appear to have lower rates of perceived harm. Although the research in this area is sparse, what does exist suggests that attitudes do play an important role in differential AOD use by ethnicity and thus are deserving of more research attention.

In the TEC survey comparison of reservation Indians, nonreservation Indians, and Anglos, 8th-grade reservation youth showed the lowest belief that drugs are harmful. Only 51% believed regularly using marijuana would lead to "a lot" of harm, 65% getting drunk, 29% drinking alcohol, and 38% using inhalants (Beauvais 1992*:41). Harmfulness rates among 12th-grade reservation Indians were also lower than nonreservation

Indians and Anglos, but the differences were not as great.

In their multiethnic smokeless tobacco survey, Riley, Barenie et al. 1990*, 1991*) determined that perceived negative consequences was one of the factors associated with initial use and level of use among Native Americans, but it was not as strongly associated as other factors and there were gender differences. It was not quite as strong among females as males or as strong among both genders as other influences. Among males, it most strongly influenced initial use and level of use among American Indians than any other gorup. It was the second most influential factor for level of use among them.

Siegelman, Didjurgis et al. (1992*) found that Native American children viewed problem drinking as less serious and attributed less causal responsibility to the individual than did Hispanic and, especially, Anglo children. American Indians also had less conventional value orientations, which accounted for all these differences. The authors suggest that further research explore the connection between unconventional values and ethnicity. Given the high prevalence of alcohol abuse on the reservations, reservation-dwelling Native Americans may see alcohol abuse as more normative than do Anglos. They speculate that socialized values, early exposure to, and involvement in, drinking, and internalization of the view that Native Americans are biologically predisposed to become alcoholics, may all combine to contribute to later drinking problems among Native American youth.

Psychological Characteristics

Poor self-esteem and use of drugs as a coping mechanism have been only weakly linked to the high rates of use among Indian youth, and overall psychological characteristics appear to be relatively poor predictors. About 30% of Indian youth studied by Oetting and Beauvais (1989*) stated that alcohol is used "to get rid of unhappy feelings." One-fourth stated that it "helps me get rid of my worries" and "helps me feel less sad." One-fifth said that alcohol "helps me relax at a party" and "makes me less nervous." These responses may indicate relatively more problematic drinking behavior among some Indian youth, as persons who take alcohol for relief of emotional symptoms have been found to be much more likely to progress to alcoholism than those who use it predominantly for social reasons.

OSAP (1990) conducted a telephone survey of program managers of OSAP-funded AOD prevention projects for Native Americans to determine, among other things, their views of the most significant risk factors and prevention approaches (instrument included in report). Poor self-esteem and parental alcoholism were perceived to be the most significant risk factors for substance abuse (88%). People with a defined spiritual belief system and/or positive self-esteem were thought to be least vulnerable (88%).

In the 1988 Indian Boading School Survey, life stress was significantly related to depression and to measures of substance use in four categories (alcohol, marijuana, inhalants, and other drugs). This relationship was related to the environment of the study, a tribal boarding school. The higher the life stress measure, the more likely the depression measure and use measures were likely to be (Dick, Manson, & Beals 1993*; King, Beals et al. (1992*).

However, recent TEC data show little support for the idea that emotional distress or low self-esteem are powerful predictors of use among Indian youth. Anxiety, depression, and low self-esteem were not significantly related to drug involvement. In one exception, angry Indian youth were more likely to have drug-involved peers. This was the only other significant difference besides family sanctions in the path models for use among Indian and Anglo youth (Oetting, Swaim et al 1989*; Beauvais 1992*:55, 61-62).

It can be seen from this review that the literature on the relationship between psychological characteristics and AOD use is confusing, if not contradictory. There are at least two methodological reasons for this. First, there is a lack of standardization among the variables that are measured. "Self-esteem," for instance, is not a well-defined construct and is used differently by different investigators. It can vary from a general "feeling good" about one's self, to self efficacy ("can I make a difference in the things that influence my life"), to a more ingrained psychological construct such as ego strength. With this range of definitions and measurement, the lack of consistency in research outcomes is understandable.

The second problem lies in looking at the relationship between various psychological traits and AOD use in the absence of the influence of social factors. Some studies may, for instance, find a small relationship between depression and AOD use; however, the relationship may be very small and be far outweighed by social factors such as peer influence. In order to sort out the complex links among all factors leading to AOD use, they all need to be considered in the same research design.

Religious Identification

Another variable which appears to have less influence among Indian than Anglo youth is religious identification. This is possibly because being religious and participating in religious activities in many tribes may have a different meaning to Indian youth. Unlike with Anglos, heavy involvement in religious activities does not appear to result in association with peer clusters that avoid drug use.

Summary

A host of factors appear to account for the overall high rates of AOD use among Indian youth. These same factors have been found to account for AOD use in general population studies and among other ethnic groups. They are not related to any inherent Indian cultural characteristics. But compared to other groups, there are important differences in terms to the degree of risk to which Native American youth are exposed and the relative influences of different specific factors.

There is wide consensus that poor socioeconomic opportunity provides the background out of which these programs grow. Poor economic conditions put a heavy stress on families which greatly attenuates the familiy's ability to provide positive modeling and to impose appropriate sanctions on AOD use. The relative isolation and general poverty on reservations leads to a lack of transportation and a dearth of recreational facilities and other types of activities or interventions which could help ameliorate the deficit in family support.

Consistent with risk factor research, in general Indian youth are exposed to more risk factors for AOD use than are other youth. Youth under these conditions, tend to aggregate into peer clusters that have a strong tendency toward deviance which is only exacerbated by the absence of countering influences. Peer cluster dynamics, especially the norming of behavior, become the most powerful influence in the determination of drug use. This social factor is so strong that it overrides any impact that psychological characteristics may have on AOD use. This largely accounts for the relatively low correlations found between constructs such as self-esteem, and other emotional problems and AOD use.

The socioeconomic factors and their sequelae help explain the differences in AOD use not only between Indian and non-Indian youth,.but also the lower rates of use among nonreservation than reservation Indians. Some socioeconomic factors, such as better education and income opportunities, may create less stressful living conditions for off-reservation youth, or they may be responding to differences in attitudes and behavioral expectations in the social milieu that are less tolerant of drug use (Beauvais 1992:230). The unique circumstances surrounding drinking on reservations certainly helps explain why reservation Indians indulge in more periodic heavy, binge drinking, while nonreservations Indians are more likely to drink smaller amounts more frequently.

PREVENTION

The call for the inclusion of AOD education in Indian schools has been relatively recent (National Indian Health Board 1984). As late as 1987, Vanderwagen, Mason, and Owan (1987:19) criticized the poor state of their prevention efforts. They observed that "the chance for exposure to alcohol education or good coping-skills courses is hit or miss." Every state-run Indian school had different requirements; peer counseling, training, and intervention projects were "few and poorly funded"; and schools had widely disparate policies for dealing with the problems, different definitions of what constituted AOD abuse, and lacked trained personnel. (See also: U.S. Bureau of Indian Affairs 1982.)

The number of prevention programs targeting American Indians is expanding markedly, in part due to funding from the Office of (now Center for) Substance Abuse Prevention, as well as the Indian Health Service. OSAP (1990) published a report summaryzing 60 Indian prevention programs cited in the literature and describing an additional 16 prevention interventions funded by OSAP. Owan, Palmer and Quintan (1987) surveyed 160 Indian-school prevention programs, most funded by the IHS. Edwards and Edwards (1988*) provide descriptions of some examples of "effective and innovative programs from a variety of Indian communities." More attention is also being directed toward developing theoretical models and improving the knowledge gained about these programs. Beauvais (1992*) presents an integrated model for both treatment and prevention. Beauvais and Trimble (1992) and Fleming (1992) provide discussion of issues in conducting research and program evaluations among American Indian AOD prevention programs. They particularly emphasize the need for taking into consideration the context of AOD use among Native Americans in designing and evaluating programs.[14]

Are the same programs equally effective for Indians as for Whites? Based on 1983 data, Trimble, Padilla, and Bell (1987*:5) concluded: "While some of the educational efforts are demonstrating effectiveness among non-Indian youth, there is little evidence that educational strategies are effective with Indian youth regardless of tribal affiliation or residential status (i.e., urban, reservation, or rural)." Similarly, May (1986*:187) warns that "programs suited for other populations in the United States are not immediately applicable to most Indian groups." As Schinke, Orlandi et al. (1990:7) observe, although explanations for tobacco use among Indian pople share commonalities with non-Indians, preventive interventions for American Indians "must attend to psychosocil factors that are irrelevant or are less relevant for other Americans. The combined effects of such influences may render Indian and Native youth less tractable to conventional preventive interventions than their other minority and majority culture counterparts."

What are the most important components of any prevention program targeting Native Americans? Lttle can be concluded definitely because of the contined lack of published program evaluations. However, the few evaluations that do exists, coupled with the etiological research reviewed above, provide several guidelines for program development.

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[14] Beauvais & Trimble (1992:194) observe: "For example, AOD use problems in Indian communities largely reflect socioeconomic conditions and are not related to any inherent cultural characteristics. Indian people are becoming increasingly impatient with the litany of social ills that are ascribed to them, and an evaluation report that presents a balanced picture will get a much better reception and is more likely to be used."

Cultural Competence

Most in need of research and development are theoretically and culturally sound intervention programs (Gilchrist, Schinke et al. 1987*:870; Schinke, Botvin et al. 1988*:87). Query (1985:500) warns "To overlook the special culture and associated identity needs of Indians or other minorities is to court failure." Fleming (1992:169) observes: "There are many Indian people who want to identify and maintain traditional beliefs and values that are life sustaining and life enhancing while they participate in the contemporary world. In part, this means that Indian people must confront those problems that hinder participation and creates stress in the lives of individuals and families. Traditional Indian ways are being successfully used to address current social problems, as is social programming developed by non-Indian."

Reflecting awareness of this, almost all tribal prevention projects funded by OSAP had a cultural awareness component (OSAP 1990). Equally important, programs need to emphasize the strengths of Native American culture. As discussed further below, considerable effectiveness has been found for prevention programs that promote both biculturalism and social or life skills among Indian youth. This approach is supported by Oetting and Beauvais' (1982) finding that bicultural Indian youth showed the least substance abuse.

Fleming (1992), among others, complains that too often social scientists focus just on the alarming rates of self-destructive behavior within Indian culture. This serves to promote the public image of the Indian as "drunken" and "suicidal." While a problem exists, it needs to be placed in context, especially in regard to "the resiliency, strengths, and numerous significant contributions these people have made and continue to make to other societies of the world" (p.149).

Consistent with this, there must be a sense of Indian ownership of the program and the program must be congruent with the current movement toward self-determination (Beauvais & LaBoueff 1985*:169). Externally imposed solutions will not work and probably will only add to the sense of failure experienced by Indian people. Half of the programs reviewed by OSAP (1990) were developed and implemented by the tribe and the majority were community-based, almost all targeting reservation communities. The program directors further identified program ownership by the community as a key element for success. In this light, Winfree and Griffiths (1983) suggest that, given the negative attitudes toward "white-man's law" that exist, prevention programs designed for the general population that include pro-law information may have only limited success among Indians.

SES Background/Opportunity

In order to make progress in reduction of AOD abuse and other destructive behaviors among American Indian youth, a primary goal must be to provide an environment that offers a secure future for them and their families that is congruent with Indian values and goals. The findings regarding social deprivation and low SES suggest that improving the lives and home environments of minority youth could reduce use among relatively high-using Native Americans as well as other groups. The first stage of prevention involves improvement of econmic factors. The next step is to provide social conditions that support and enhance family functioning (Beauvais 1992*, 1992a*).

Family Intervention

Data presented here indicate that the family can be an important influence both as a risk and as a protective factor. Although poor family management and parental modeling are among the most powerful risk factors for Native American youth, one of the strengths of Indian culture is a strong belief in family, supportive family relationships, and the extended family. After improvements of econmic factors, Beauvais (1992*) recommends that the next step in prevention should be to provide social conditions that support and enhance family functioning. A 1986 survey of 420 Indian schools and 160 AOD programs, "strongly suggested that interventions that attempt to enhance the health of Indian and Native families may be the most powerful in preventing an/or reducing the incidence of alcohol and other drug use among Indian youth (Owan, Palmer, & Quintana 1987). Edwards and Edwards (1988*) present a number of strategies for helping Native American families and parents.

Treatment of adult AOD abuse and related problems cannot be separated from prevention of adolescent use. Adult treatment needs to be available and effective. Parents and other adults need to understand the modeling influence of their behavior and its role in perpetuating AOD use problems over generations.

Prevention and intervention programs need to focus on teaching parents the importance of establishing and communicating sanctions against use. The most important function of a family in preventing AOD involvement appears to be to provide strong sanctions against its use. When youths feel that their families provide strong sanctions against alcohol use, their children are more likely to associate with peer clusters that also have strong sanctions against alcohol abuse (Oetting & Beauvais 1989*).

Recent evidence indicates that promoting family communications skills may be essential: Beauvais (1992*:26) emphasizes that the data indicating high levels of AOD use on reservations should not be interpreted as meaning that reservation Indians condone, and do not try to stop, adolescsent drug use. As discussed above, they have found "nearly universal, strong attitudes against the use of drugs by youth." Apparently, however, "these attitudes are not being effectively communicated to youth. Finding ways of accomplishing this task presents a real challenge to those interested in drug abuse prevention." Effective use of the influence of elders maybe especially useful in this regard.

More generally, parenting skills programs are needed in order to strengthen the family and give support to family sanctions. Oetting and Beauvais (1989*:265) maintain that strengthening the family is also integral to strengthening cultural identification: "For a young Indian, cultural identification is closely tied to the family's stake in Indian culture. That stake is correlated with good family relationships and can infuence drug use through that path." In this process, tribes need to provide parents with cultural programs and activities to enhance the parents cultural identification and show that AOD use are not in accord with the Indian way.

Programs also need to take into consideration the potential influence of the extended family. The etiological research indicates that "strong families can protect a youth from drugs, but extended famlies can also represent a danger" (Beauvais 1992*:23). Indian youth cannot travel easily and often associate with both same-age and older relatives. It is possible that many Indian youth begin their drug use through the influence of older siblings or cousins, raising the possibility that new prevention approaches that make greater use of family interventions could be developed for Indian children.

School Intervention

The schools need to be involved in prevention not only because children are brought together in school, where they can be reached by programs, but because promoting good school adjustment and success is important in itself. This is especially true for American Indians because of their high rates of school failure and dropping out. Prevention programs need to identify those children who are not doing well in school and find ways to improve their school adjustment and to keep them in school.

Peer Intervention

While increasing young people's bicultural competence has been shown to have some preventative effect in itself, peer cluster theory suggests that prevention programs will have to somehow stop the formation of alcohol-using or otherwise deviant peer clusters and encourage the formation of peer clusters that provide strong sanctions against use. Such an approach has been lacking in "cultural" programs. It is important that prevention programs take peer clusters into account. Drug and alcohol use takes place most often within peer clusters, groups of close friends, best friends, or couples. Among Indian youth, because of transportation problems and isolation, these peer clusters are more likely to include close relatives such as siblings and same age aunts and uncles. As a result, special programs to prevent transmission of substance use within these family clusters may be worthwhile.

Unless prevention skills can be applied within these peer clusters, they are unlikely to have much effect. However, a "Just Say No" approach premised on the belief that peers and adults "push" drugs on unwilling youth will not work. Programs seeking to address the strong influence of peer drug associations must address the underlying family, school, and other social factors that influence a youth to join such a group and must seek to influence the internal norms of the peer cluster and not imply that adults are "pushing" drugs on kids.

Bicultural Skills Training

The published evaluation literature is largely limited to a few innovative personal and social skills training programs targeting Native Americans developed and evaluated by Steven Schinke and colleagues. These programs emphasize providing youth with specific skills needed to cope with, and be successful in, life (as well as reduce social pressures to use drugs). Such skills in themselves have been shown to be essential for healthy youth development and resiliency, particularly among youth who experience multiple stressors, such as Native Americans.

Schinke and colleagues set out to improve this approach by enhancing its cultural appropriateness for Native Americans, by stressing bicultural competence; that is, by allowing pupils to integrate majority culture values, norms, and behaviors without losing their identification with, and respect for, traditional values. Their evaluations indicate that school-based prevention programs that teach social and life skills and that are carefully designed and tailor to be culturally appropriate can be effective for Indian youth.

To briefly summarize these studies, Gilchrist, Schinke et al. (1987*) studied a culturally tailored 10-session skills enhancement program given to 102 Indian youth living in seven urban and rural sites in the Pacific Northwest. The youth were randomly assigned to intervention (3 sites) or control conditions. Demographic and baseline drug-use data for the three intervention sites and the four control sites (one urban and two rural) were comparable. At six-month follow-up, intervention condition subjects had: (1) better knowledge of drug effects; (2) better interpersonal skills for managing pressures to use drugs; (3) lower rates of alcohol, marijuana, and inhalant use, compared with test-only control condition subjects; and (4) less likelihood of labeling or considering themselves users of these substances. Surprisingly, although this study found positive program effects, no effect was shown on self-esteem, probably because the measure used was too generic.

Schinke, Bebel et al. (1988*) determined the effectiveness of a bicultural competence model among 61 Native American 5th and 6th graders, randomly assigned to intervention and control conditions. At the six-month follow-up, the treatment group had higher scores than the no-intervention control group on the drug knowledge measure and on ratings of self-control, alternative suggestions, and assertiveness, and reported less use of smoked and smokeless tobacco, alcohol, marijuana, and inhalants during the previous 14 days.

In a similar study, Schinke, Botvin et al. (1988*) found modest support to bicultural competence skills training among 137 Native American adolescents from two Western Washington Reservation sites. Treatment subjects showed greater posttest and six-month follow-up improvements than did American-Indian youths in a non-intervention control condition on measures of substance-related knowledge, attitudes, and interactive abilities, and on self-reported rates of tobacco, alcohol, and drugs use. This study is considered by the authors to be a pioneer step toward testing bicultural competence approaches to preventive intervention.

The results of these generally well-designed studies are limited because of the small sample size and short follow-up periods. Nevertheless, they indicate that this approach can delay onset of substance abuse among some Indian adolescents.

Community Intervention

Given the lack of expressed sanctions against alcohol use and weak sanctions against drug use that have been found, it is essential to foster throughout the community an understanding that abuse is a problem and to involve the community in its elimination or reduction (Beauvais & LaBoueff 1985; Carpenter, Lyons, & Miller 1985:308; Vanderwagen, Mason, & Owan 1987:67, 88-91). Binion, Miller et al. (1988*) stress that a combined effort by community organizations is needed to offset the positive experiences associated with drug use among adolescents. Beauvais and LaBoueff (1985:159) write: "The goal of an intervention effort aimed at community values is to create an observable ethic which encompasses the community's stance on drug and alcohol use. Furthermore, such an effort must make clear what the acceptable options are for the individual within the community." (On community approaches, see also McDiarmid 1983; Edwards & Edwards 1988.)

Alternative Activities

Given the etiological role of free-time and boredom, it has been frequently recommended that drug-free, planned, and structured alternative youth activities, such as recreation or community service, need to be developed (Vanderwagen, Mason, & Owan 1987:19). In the geographically isolated reservations, there are very few businesses, industries, theaters, parks (Binion, Miller et al. 1988:62). However, there may be grave problems involved in trying to provide for alternative activities, particularly adult monitored rather than informal peer groups. Transportation on reservations is a severe limiting factor; distances are great and public transportation is almost entirely lacking. Facilities are another problem; there are often no locations, meeting rooms or other facilities for adolescent activities. The final and crucial problem is money. A steady commitment of funds is necessary. Most adolescent activities have been funded by grants or gifts and when those dry up, so do the activities.

Personality Factors & Religiosity

In contrast, programs focused on simply enhancing self-esteem or dealing with emotional problems in themselves would not appear to have much merit. Oetting, Beauvais, and Edwards (1988*) determined that among Indian youth heavy alcohol users differed from nonusers on a spectrum of family and school problems, and on the number of peers encouraging use, but not on any personality dimensions. This would lend credence to the importance of focusing prevention efforts on the family and community rather than the individual. However, addressing these factors as part of comprehensive approach may enhance the value of the program.

Similarly, evidence would suggest that there is little value in enhancing religiosity, as this was only weakly correlated with AOD use by Indian youth. It is important to realize that religiosity, in the western, Christian sense, is very different from the spirituality that is an integral part of Indian culture. As discussed above, attention to Indian culture can be an effective component of drug prevention with Indian communities.

Intervention Strategies: Student Assistance and COA Programs

On the one hand, Okwumabua and Duryea (1987*) recommend that programs be targeted at reducing initiation among

Indian children rather than at reducing actual use among older users. On the other hand, the evidence that we have made little progress in reducing use among high-risk users underscores the need for interventions aimed at reducing use among those already involved in AOD use. This underscores the need for comprehensive prevention and intervention programs aimed at not only stopping or delaying use initiation but promoting the cessation of use or, minimally, reducing the levels of use and the harm resulting from it.

Carpenter, Lyons, and Miller (1985*) raise the question of whether, given their high level of drinking, many Native American youth may be unresponsive to the predominant type of program that emphasizes a disease model or advises permanent abstinence. They evaluated a peer-managed, responsible drinking approach that provides specific guidelines and goal-setting procedures, and teaches specific procedures for achieving goals of responsible drinking, including self-control. Significant decreases were observed in quantity and frequency of drinking and in peak blood alcohol levels. These improvements were maintained at all posttreatment followups through month 12. No differences among the treatment groups were found, indicating that minimal and full program interventions had comparable effects. Important factors in successful implementation include careful training and selection of peer counselors, on-going program evaluation, and participation of the whole community and school administrators.

Klitzner, Fisher et al. (1992) stress the importance of developing early intervention efforts for adolescents who are already using to prevent them from developing serious use-related problems or dependence. They recommend such programs have three functions:

- to screen (identify), assess, and refer youth to programs tha provide them with the help they need;
- to provide low-intensity, short-term therapeutic services (e.g., counseling, support or self-help groups); and
- to provide services aimed at addressing related problem behaviors.

Although treatment programs for Indian adults and even adolescents are available, it is now also recognized that children from these homes need interventions to cope with the family problems created by parental and even sibling AOD abuse, as well as other risk factors. This is essential if we are to break the intergenerational cycle that has long perpetuated this problem.

Given the many problems and risk-factors that Native American youth do face, student assistance program (SAP) models targeting them need to be developed and implemented. These programs can provide identification, referral, and services to youth who demonstrate risk factors for AOD use or provide intervention for those who have already initiated use. Originally focused just on providing AOD use-related services, most programs now are designed to provide services to all students who are having problems that impact adversely on their education and healthy development and behaviors and risk factors that are related to AOD use. As a result, SAP services now routinely address a broad spectrum of problems, such as family dysfunction or divorce, depression, eating disorders, grief, gang- and delinquency-related behaviors, and school dropout. The movement represents an expansion of prevention beyond the focus on AOD use per se to include the promotion of the healthy development of the whole child. Proponents argue that because SAPs address so many issues, the underlying causes of AOD use or other problems can be handled within the school setting. Although very limited research has been conducted on their efficacy, a three-year program evaluation in California, using an experimental design with a comparison group, determined that SAPs were effective in suppressing student AOD use and in improving the social and psychological characteristics of the students (Pollard & Houle 1993).

As part of the SAP process, programs targeting children of alcoholics (COA) should especially be considered because of the high rates of parental and family alcoholism among Native Americans.

Such programs typically include four components to help prevent the onset of use among the youth, understand their parents own drinking, deal with their own feelings, and provide the social and life skills the youth may need to deal with their difficult situation and family dysfunctions:

- education about AOD use and its effects;
- identification and expression of feelings;
- development of healthy self-esteem and social interactions; and
- development of healthy problem-solving and coping skills (Austin and Prendergast 1991).

However, it is important that COA programs carefully avoid labeling and any suggestion that American Indians have a genetic propensity toward AO abuse. May (1989) warns that the widely accepted belief that Indians are biologically susceptible to AOD use has a number of unfortunate consequences, not the least of which is infusing a sense of fatalism. This attitude greatly hinders intervention efforts in Indian communities. May feels that it is vitally important that education programs focus on correcting this misconception. Similar concerns are voiced by Siegelman, Didjurgis et al. (1992*).

More generally, it is essential to recognize that any program doing work in intervention, treatment, and support with Native American youth must be ready to address multiple problems and issues related to their AOD use For example, a student referred for chemical dependency treatment may begin to deal with sexual abuse perpetrated by an alcoholic relative. Furthermore, tribal cleansing and healing ceremonies need to be made available to families and to youth to bring them back when they have developed problems.

CONCLUSION

This review of the research shows that developing effective prevention programs for American Indian youth will be a complex and difficult undertaking. An overall solution to the problem will need action at all levels from improving the basic socioeconomic status of Indians to creation of specific programs for individual groups of Indian youth. It is probably impossible to do everything that needs to be done at once, so priorities will need to be set. These priorities must involve determining what is practical and feasible, as well as decisions about what may be most immediately effective.

The high levels of AOD use found among reservation youth are probably due to those characteristics that lead to increased numbers of risk factors for individual youth. These problems are chronic for Indians in our society and for Indian tribes. One of the most damaging risk factors, for example, is family disruption and dysfunction, and those family difficulties may be derived, in part, from socioeconomic tribal problems. When unemployment rates are as high as 80%, it creates serious economic and psychological stress for families and makes it hard for them to support and care for children adequately. Prejudice against Indians creates further family stress. There are high rates of adult alcoholism in some tribes, and the alcoholic parent cannot provide the emotional support and teaching that children need. School dropout and lack of educational opportunities among Indian parents makes it harder for those parents to support the child's adjustment to school.

It may be a long time before unemployment, prejudice, and general lack of opportunity can be conquered, but they should not be ignored as primary causes of the problems of Indian families and their children. In the meantime, the research suggests that:

- Reservation families need to be strengthened so they can provide the support and assistance their children need.

- Treatment for adult alcoholism needs to be available and effective.
- Tribes need to provide parents with cultural programs and activities to enhance the parents cultural identification and show the parents that alcohol and drug use are not in accord with the Indian way.
- Opportunities need to be found to strengthen family ties and to increase communication of sanctions against alcohol and drug use. Parents need to learn how to effectively communicate their cultural values and beliefs to children.
- The strengths of Indian culture need to be identified and utilized and biculturalism promoted.
- When parents are not providing adequate support and monitoring of their children, the extended family needs to be brought into play.
- Children who are not doing well in school need to be identified and ways found to improve their school adjustment and keep them in school.
- School-based prevention programs that teach social and behavioral skills and that are carefully designed and tailored to be culturally appropriate can be effective for Indian youth.
- Student Assistance, COA, and other support and referral intervention services need to be expanded. These programs need to help youth cope with current risk factors, promote positive youth development.
- For youth who have already initiated use, efforts need to be undertaken to help their stop use or reduce it and the harm associated with it.
- Peer clusters need to be taken into account, including the membership of close relatives within these clusters.
- Methods need to be found to provide more positive alternative activities for reservation youth.

It is critical that all of these efforts be designed specifically for individual tribes or even for subgroups within larger tribes. Indian culture is rich and varied. It offers many opportunities for culturally appropriate activities, for learning cultural values that are antagonistic to substance use, and for developing attitudes and behaviors that strengthen the person. These grow out of traditions and values that may be fundamental to most Indian culture, but that are reflected in different ways and in different activities for individual tribes. If they are to be effective, and if they are to be accepted by American Indians, it is essential that all prevention activities on reservations grow out of local traditions and local culture.

It is important to further explore subgroup differences regarding gender and location. The extremely high rates of use among Indian adolescent females compared to females—and even males—of other ethnic groups suggest that programs specifically targeting the risk factors and patterns of use associated females may need to be developed. Similarly, more information is needed to guide the development of programs targeting nonreservation, urban youth.

The early use onset by many Indian youth shows that there is a need for these programs quite early, but early prevention by itself it not enough. Constant and continuous exposure is needed to maintain the effects. In addition, programs aimed at reducing use and use-related harm among high-risk users are as important as primary prevention.

ABSTRACTS

BACHMAN, JERALD G.; WALLACE, J.M, et al. 1991. Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976-89. *American Journal of Public Health* 81(3):372-377.

Questionnaire data from the National High School Seniors Survey, an annual, nationally representative survey of drug use among high school seniors, from 1976 through 1989, were used to examine racial or ethnic differences in alcohol and other drug use. The combined sample was nearly 207,000. The senior classes were combined into three groups (1976-1979, 1980-1984, and 1985-1989) for analysis. Over the period of the study, the proportions of Whites in the samples decreased, whereas the proportions of Asian Americans and Hispanics increased substantially, paralleling national demographic shifts. In the last age group (1985-1989), 79% were White, 11% Black, 4% Mexican American, 2% Puerto Rican/Latin American, 3% Asian Americans and 2% Native Americans. Data was examined for annual, monthly, and daily use prevalence of 13 types of drugs by sex and race.

Findings: *Marijuana*. Marijuana use was highest among Native American males and females, and almost as high among White males and females, and Mexican males. In the 1985-86 sample, rates were somewhat lower among Mexican females, Puerto Rican and other Latin males, and Black males: the lowest rates were among Puerto Rican and other Latin females, Black females, and Asian males and females.

***Cocaine*.** Prevalence rates for cocaine were highest for male and female Native Americans and males in both Hispanic groups, but significantly lower for Hispanic females. Rates for Whites were fairly similar to those for Hispanics, except that the difference was smaller between males and females. Rates were significantly lower for Blacks and Asians. The prevalence rate was about the same between genders for Asians, but about twice as high for Hispanic males than Hispanic females.

***Other illicit drugs*.** For most subgroups, illicit drugs (inhalants, hallucinogens, heroin, other opiates, stimulants, sedatives, and tranquilizers) are used at a lower rate among females than males. Usage rates were highest for Native Americans, and lowest for Blacks and Asian Americans.

***Alcohol*.** Alcohol use among White and Native American males and females is relatively high, while among Black and Asian seniors, only about half of the males and one-third of the females reported use of alcohol during the last month.

***Tobacco*.** Cigarettes have been used just as much by young women and by young men in recent years. High levels of use (half-pack per day) was highest among Native Americans, less for Whites, and much less in the other subgroups.

***Long-term trends*.** A comparison of the three cohort groups (1976-79, 1980-84, 1985-89) revealed that trend patterns for most forms of drug use were similar across ethnic subgroups, although cigarette use declined more sharply for Black than White seniors, resulting in greater Black-White differences in recent years. For more than a decade, the racial/ethnic subgroups have generally shown parallel changes in their use of alcohol and the illicit drugs.

Conclusions. Examination of the 1985-1989 combined data indicated that, overall, Native Americans had the highest prevalence rates for use of cigarettes, alcohol, and most illicit drugs. Asian Americans had the lowest prevalence rates, and Black students had rates nearly as low except for marijuana. Prevalence rates for Hispanic groups were mostly in the intermediate range, except for relatively high cocaine use among the males. Levels of drug use found among non-White youth were relatively low, consistent with other studies.

The results did not appear to be a product of differential reporting by ethnic groups. According to other research, Black and Hispanic youth are more likely than White youth to under-report their use of marijuana, although this most often occurred at the lowest levels of use. However, there was no evidence of under-reporting of alcohol and cigarettes. Further analyses of the data indicated that Black-White differences in self-reports were largely the result of genuine differences in drug use between these groups. Thus it would appear that self-report data was mostly valid across subgroups. However, the inclusion of dropouts in the sample might have resulted in several differences. First, Hispanics have higher than average dropout rates; therefore, comparisons of all White and Hispanic 17-to-18-year-olds would probably yield somewhat smaller differences in drug use than found in samples of high school seniors. Second, Asian Americans have lower than average dropout rates; thus rates for this subgroup would appear relatively even lower. Third, given the very high dropout rates among Native Americans, they would be placed even farther above average. Fourth, Black-White differences in drug use might be reduced further, although the reduction would not be very large given the fairly similar dropout rates between Blacks and Whites.

It remains to be seen why AOD use may be lower among minority groups than Whites. Multivariate analyses reported elsewhere (see Wallace and Bachman 1991*) indicated that subgroup differences in high school seniors' drug use are not primarily attributable to family composition, parents' education, region, or urban-rural distinctions. It would appear that the relatively low usage rates among Blacks are strongly influenced by particular religious doctrines and affiliations; differences in parent, peer, and community norms; different attitudes regarding the use of drugs; or differing levels of perceived risk.

It should be noted that drug-related mortality and morbidity are higher among Black than White adults. Data from the National Household Surveys comparing Blacks and Whites at various age levels suggests that Black youth show much lower usage rates than White; in early adulthood differences are smaller; and by middle adulthood, the drug/use/abuse rates are often higher among Blacks. Another factor in this process is that there appear to be "two worlds" of drug use (particularly alcohol) among Blacks, with extremes of abstinence at one end and heavy use/abuse at the other.

Because minorities make up disproportionate shares of most or all "high risk" populations such as dropouts, chronic absentees, juvenile delinquents, homeless youth, who are not well represented in samples of high school students, it is still widely believed that drug use is more pervasive among minorities than among Whites. While that remains a possibility among the dropouts, it now seems quite unlikely among young people who complete high school and a majority of non-White youth do complete high school.

BEAUVAIS, FRED. 1992. An integrated model for prevention and treatment of drug abuse among American Indian youth. *Journal of Addictive Diseases* 11(3):63-79.

Native American youth have repeatedly been shown to be at relatively high risk for drug abuse. Epidemiological studies of Indian students over the past 2 decades have revealed rates of use consistently higher than those found for other youth. Socioeconomic and historical factors have led to conditions that put a great deal of stress on the family and other support systems which in part account for the seriousness of the problem.

A model is presented which can guide both prevention and treatment efforts addressing drug abuse in Indian communities. In this model, five variable domains are all related in an integrated structure: social structure, socialization factors, psychological variables, peer associations and drug use. Although the discussion is focused on Indian youth, the description has application to other populations. By following the progression of the etiological variables, a stepwise plan can be developed to organize interventions. Although the model has immediate utility, a number of further research questions are outlined that will enhance its application.

In data collected over the last 15 years, on rates and trends in drug use among Indian youth living on reservations, two consistent patterns have emerged. First, for nearly every drug (using several measures of prevalence), Indian youth show significantly higher rates of use. Particularly marijuana shows much higher usage rates for Indian youth. The same pattern is evident when the total level of drug involvement is measured.

The second pattern describes drug use over time. Lifetime and annual prevalence rates show a dramatic increase from 1975 to 1981 with a gradual, consistent decrease since then. This trend is parallel to what has been found for non-Indian youth across the country. It appears that not only is drug behavior among Indian youth modifiable, but that whatever is leading to reductions in the general population is also likely to be affecting Indian youth. This provides some promise that entirely separate interventions might not be needed for Indian populations.

A Developmental Model. The utility of the model lies in the ability to conceptualize both treatment and prevention using the same developmental framework. There are four domains that influence an individual's decision to use or not use drugs.

The first domain is social structure. Social structure is comprised of basic conditions that affect young people early in life. Included here are questions related to the economic conditions of the family, identification with one's culture, and whether or not there is adequate parental support within the family.

The second is socialization. One of the early developmental tasks of childhood is learning to socialize and interact with other people. The basis for this learning is the way the child relates to the immediate family. For most children the first major step in socialization outside the family comes when they enter school.

The third domain, psychological factors, assumes that a child's sense of psychological well-being is derived form how well he or she interacts with the external world. Competency within the family and a good adjustment to school leads to positive self-esteem, and a lack of depression, anxiety, alienation, etc. Indian youth are faced with an additional hurdle in the development of personal competence since they live in at least 2 cross-cultural social environments with different demands.

The last domain of variables involve relationships with peers. The concept of "peer clusters" is a refinement of the more general term of "peer influence" that is often associated with adolescent drug use. Youth of like mind will gravitate toward one another, they will share ideas and feelings, and together will decide what behaviors are appropriate. It is within these small groups that such things are decided as the right kind of clothes to wear, what music is acceptable, how adults are viewed, and so forth. If the peer cluster is composed of deviant youth, decisions and norming around antisocial behavior, including drug use, will take place.

Treatment. Treatment of drug use must begin with the factors that have the most immediate and powerful influence—those found within the peer cluster. One of the first steps in treatment is to demonstrate to young people the strength of this developmental process and help them restructure their social lives. For Indian youth, this process is made more difficult since their peer cluster often is made up of same-aged relatives (including close-aged siblings). Disentangling the influence of peers who are family members is more complex because of the kinship ties. Another barrier that must be overcome is the common adolescent resistance to the idea that their behavior is in any way influenced by their friends.

Two avenues of social restructuring are possible. First, the youth can agree to remove him or herself from the old peer cluster and initiate new social relationships—a difficult task since the peer group has become such a vital part of their lives. The second approach to breaking the influence of the peer cluster is to change the attitudes, values, and behaviors of the entire cluster. Not only are new peer-oriented treatment approaches needed, but ways must be developed to gain access to peer clusters and bring them into treatment.

At the point where youth in treatment have come to a better understanding of the role played by their peers and have gained some insight into the psychological motivations behind their substance abuse, they may be ready to take on some of the socialization issues of family and school.

Finally, the most fundamental factors leading to drug use—socioeconomic status and cultural identification—can be addressed. Once a youth has made a commitment to treatment and to staying off alcohol or drugs, cultural concepts can be very powerful in maintaining sobriety.

Prevention. Primary prevention operates in the opposite direction as treatment and begins with the "social structure." Prevention in its broadest sense requires that basic social conditions be altered so that the source of stress on family, schools and other institutions is minimized. This involves improvement of economic factors leading to poverty, prevention of family dysfunction, providing a sound cultural base and improving educational services.

The next step in prevention is to provide social conditions that support and enhance family functioning. Once again, this requires a major societal effort in that adequate provisions must be made for health care, child care, family counseling, and legal services that take the strain off of family relationships.

The most important part of primary prevention takes place in the early years of a youth's development. Those young people who experience good family and school environments will generally be well-adjusted emotionally and thus avoid association with deviant peers. However, it is recognized that regardless of upbringing, growing up involves some stress and it is imperative to be prepared to help youth through the stormy period of adolescence.

The final step in prevention is to encourage youth to become involved in healthy peer clusters. To some extent this will happen naturally if all the previous steps in primary prevention have been successful.

BEAUVAIS, FRED. 1992a. Indian adolescent drug and alcohol use: Recent patterns and consequences. *American Indian and Alaska Native Mental Health Research* 5(1):v-78.

Seventeen years of research on AOD problems among American Indian youth conducted by the Tri-Ethnic Center for Prevention Research are summarized.

Lifetime Use Trends. Trends in overall drug use between 1975 and 1990 among

Indian and non-Indian youth have followed similar patterns, increasing from 1975 to the early 1980s and, for the most-used drugs, declining since then. This pattern is clearest for marijuana (at 54% in 1990), inhalants (23%), and stimulants (16%). In contrast, rates for cocaine and hallucinogen use by Indian youth increased until 1990 (to 9% and 12%, respectively), possibly because changes in the use of some drugs by Indian youth lag a year or two behind the national trend or supply patterns have changed.

Although there has been a reduction in alcohol lifetime prevalence since 1985, the pattern is uneven, remaining stable at 79%-81% between 1983 and 1987 but dropping to 74% in 1990. Furthermore, although data on intoxication is only available for 1985-1990, there is evidence of a possible increasing level of alcohol involvement. This is consistent with anecdotal evidence from treatment workers on reservations that alcohol use is increasing among adolescents.

Data on tobacco is also only available since 1985, but the most recent survey results suggests that use of both cigarettes and smokeless tobacco may be declining (to 67% and 51%, respectively, lifetime prevalence rates).

At every point in time more reservation Indian youth are involved with drugs than are non-Indian youth in national surveys.

The decline in overall drug use has occurred because of a considerable number of moderate users have shifted to nonuse. There has been no decrease in the proportion of high-risk users; since 1980, it has stayed between 17% and 20%. Societal changes and prevention programs are reaching casual drug users but not those susceptible to heavy drug involvement. High-risk youth are likely to have multiple problems that need rectifying, and the usual attempts to change attitudes through advertising, by increasing penalties or by building social skills will not work. Prevention must be two-pronged, with much more intensive intervention aimed at high-risk groups.

Reservation, Non-Reservation, and Anglo Comparisons. Rates of drug use and involvement were compared for three groups: Indian youth living on reservations, Indian youth living off reservations and Anglo youth. A consistent pattern emerged, showing the lowest rats of use among Anglo youth, higher rates among non-reservation Indian youth, and the highest rates among Indian youth on reservations. Rates of tobacco use, both smoked and smokeless, and marijuana use are especially high for Indian youth.

Indian youth also show a pattern of earlier initiation to drug use, although differences between the three groups are generally small, and the early stages described by gateway theories do not hold up well for them. By the time they were 12 years old, 21% of reservation Indians had tried marijuana compared to only 5% of Anglo. Age of first alcohol use was the same for reservation youth and Anglo youth, probably due to the lack of availability of alcohol on reservations. Inhalants were often the first drug used. Indian youth may get drunk for the first time well after trying marijuana or inhalants.

Tobacco use was particularly high and, in contrast to the rates for other drugs, varies considerably from tribe to tribe. There is no clear explanation for either finding.

Gender differences reveal slightly higher rates of use for males for all three groups, although the differences are not great enough to suggest that prevention efforts for males should have a higher priority.

Use Consequences. Indian youth have higher rates of using alcohol and drugs in ways that increase their risk, such as getting drunk, drinking while driving, and using drugs and alcohol together. Not only were alcohol and other drugs being used heavily by Indian youth, but also they were causing problems. The highest rate was found among reservation youth, a lower rate among non-reservation Indians, and the lowest rate among non-Indian youth. Frequency of self-reported consequences from AOD use follow the same order, with 15% of reservation seniors involved in an alcohol-related accident. The most frequent consequences involve relationship problems. Drug injection is rare in all groups.

Attitudes. Alcohol, marijuana, and inhalants are the easiest drugs to obtain,but all drugs are available to some students. Younger students felt that inhalants were easier to get than marijuana. Availability does not have a major effect on use; if there is motivation to use, drugs are available. Perceive harm is linked to use, and 8th-grade reservation youth show the lowest belief that drugs are harmful; only 51% believe that using marijuana regularly will lead to "a lot" of harm. In general, non-Indian youth show higher rats of perceived harm, congruent with their lower rats of drug use.

Use Context and Peer use. There is not much drug use at school, but reservation youth are most likely, non-reservation Indian youth next most likely, and non-Indian youth least likely to have used drugs at school. Alcohol and drugs are used most frequently at weekend parties and at night with friends. Reservation youth are twice as likely as the others to have used alcohol while driving around and three times more likely to have used drugs while driving around. Drugs are used with friends. Heavy drug users are more likely to have friends who use drugs and friends who encourage drug use and are less likely to have friends who would try to stop them from using drugs.

Use Characteristics. The overall high rates of AOD use found among Indian youth may be accounted for in part by lack of educational and employment opportunity and other endemic problems of Indian reservations. individual drug involvement is most highly related to membership in drug-using peer clusters; but because of physical isolation, links between drug use and close friends are weaker for Indian youth, and family influence is felt more strongly. Anxiety, depression, and low self-esteem are not related to drug involvement, but angry youth are more likely to have drug-involved peers. Risk factors for Indian youth are low family caring, age first drug use, poor school adjustment, weak family sanctions against drugs, positive attitudes toward alcohol use, risk of school dropout, father not at home, and poor religious identification.

Prevention. In order to make progress in reduction of AOD abuse and other destructive behaviors among American Indian youth, a primary goal must be to provide an environment that offers a secure future for them and their families that is congruent with Indian values and goals. Second, to reduce personal demand for drugs,it is essential to develop programs that will identify youth at risk and that will alleviate the damaging effects of risk factors. Week bonding between the family and school needs to be strengthened, curricula must be culturally significant and not be the only intervention provided. It is essential to provide early identification and intervention and develop programs for parents. Elders are also often overlooked as a valuable and vital resource. the evidence supports the need for multidimensional and traditional approaches that are focused on peers, family, school, and community.

BEAUVAIS, FRED, & LABOUEFF, S. 1985. Drug and alcohol abuse intervention in American Indian communities. *International Journal of the Addictions* 20(1):139-71.

Indian culture is vital and growing, but federal policy has helped lead to inertia in community action. American Indian tribes are seen as an anachronism by many non-Indian people. Most would acknowledge that Indians provided a colorful chapter in American history, but apart from contemporary Indian arts and crafts little serious thought is given to thinking as to whether tribes should be assimilated into the larger culture or allowed to pursue an alternate cultural path. In its ambivalence toward Indian people the federal government has fostered a state of dependency which has made problem resolution extremely difficult. A strong activist climate can be used to revitalize Indian culture. Alcoholism is a critical problem and drug abuse is a serious problem. Interventions must attempt to restore traditional harmony with nature and include self-determination, bolstering of community spirit, and grass-roots involvement. If the spirit of the community can be bolstered and hope developed through communal action, solutions to abuse problems will be forthcoming. When the community has clearly decided its position on the use of chemicals it will be in a position to construct programs and request external assistance. Substance abuse intervention is a local problem and can be resolved best through local initiative.

BEAUVAIS, FRED, & TRIMBLE, J.E. 1992. The role of the researcher in evaluating American Indian alcohol and other drug abuse prevention programs. In: M.A. Orlandi, R. Weston, & L.G. Epstein, eds., *Cultural Competence for Evaluators.* OSAP cultural competence series 1. DHHS Publication No. (ADM)92-1884, pp. 173-201. Washington, DC: U.S. Government Printing Office.

This chapter defines the role and responsibilities of researchers who are asked to evaluate alcohol and other drug (AOD) programs in American Indian communities and settings. Building on the framework provided in the previous chapter, it identifies the various conceptual, methodological, and procedural problems that evaluators may encounter in settings that are culturally different from their own. Topics such as gaining access, measurement equivalence, report writing, and dissemination of results are given specific attention. The chapter also highlights those factors that can assist in "bridging the gap" between those responsible for designing an evaluation protocol and those charged with designing and implementing prevention programs, and concludes that evaluation planning must be integrated into the planning of AOD programs in Indian communities.

BEAUVAIS, FRED; OETTING, E.R.; & EDWARDS, R.W. 1985. Trends in drug use of Indian adolescents living on reservations: 1975-1983. *American Journal of Drug and Alcohol Abuse* 11(3/4):209-229.

From 1975 through 1983, anonymous surveys on drug use were administered to more than 10,000 7th-12th grade students in Indian reservation schools representing 30 tribes. The results, believed to be reasonably representative of Indian youth living on reservations, were compared with those of National Institute for Drug Abuse's National Household Drug Survey.

Findings. From 1975 through 1981 there were six years of increasing drug involvement among Indian youth, with the exception of hallucinogens, sedatives, and tranquilizers. After 1981 there occurred a slight drop in lifetime prevalence for most drugs except inhalants and a considerable drop in stimulant and sedative use. Current use figures showed the same trend, with increasing current use through 1981 followed by a slight drop.

Lifetime prevalence for most drugs was higher than that for non-Indian youth throughout this period, and rates for alcohol, marijuana, and inhalants, the most frequently tried drugs, were particularly higher. More than a fourth reported getting high or drunk at least once during the two months prior to the survey.

Lifetime prevalence for marijuana was more than double that of non-Indian youth, approaching the level of alcohol. In one school grade, more youth had tried marijuana than alcohol. Lifetime use was reported by 74% in 1980-81, compared with 41% in 1975, "an almost incredible increase." Of those trying it, 80% continued use.

Lifetime inhalant use had increased gradually from 15% to 32% between 1975 and 1983. Not only was there a high lifetime prevalence but 27% of those who had tried inhalants continued to use them, a phenomenon which may be unique to Indian youth. Among non-Indians, use prevalence was much lower and did not show a similar increase over time. There was no difference between Indian males and females in either lifetime prevalence or recent use, whereas non-Indian males used inhalants more often than females. There was also a decreasing age curve: recent use decreased as age increased, indicating inhalants were especially popular among young students. The lack of any decrease in inhalant use after 1981 may reflect its endemic nature.

Analysis of patterns of drug use, in which youth were classified according to number, type, and depth of involvement with drugs in eight categories, showed a similar trend, with sharp increases until 1981 and then a drop in all but one of the more serious drug use types, the one including inhalants.

Overall, 53% of Indian youth were classified as "at risk from their drug involvement," compared with 35% of non-Indian youth.

Conclusion. The signs of improvement after 1981 can be cause for optimism. Nationally, there has also been a decline in drug use since 1981, possibly due to changes in those broad psychosocial forces which shape drug use. These forces may be extending even to remote reservation areas.

However, about half are now at some risk due to their drug and alcohol use. Reasons for this high level of drug use among Indian youth probably relate to the severely detrimental conditions on reservations: unemployment, prejudice, poverty, and a generally disheartening outlook about the future.

BEAUVAIS, FRED, & OETTING, E.R. 1988. Indian youth and inhalants: An update. In: Crider, Raquel, and Rouse, B., eds. *Epidemiology of Inhalant Abuse: An Update*. NIDA research monograph 85. DHHS Publication No. (ADM)88-1577, pp. 34-48. Washington, DC: U.S. Government Printing Office.

In an update of the 1983 survey conducted by Beauvais, Oetting, and Edwards (1985--see above), data were examined from over 12,000 students living on reservations in 1985. For this analysis, only results were examined for 12th, 8th, and 4th-6th graders. Of primary interest were the 12th graders, who were compared with the high school seniors surveyed by NIDA's National High School Seniors Survey. Because there is a relatively high dropout rate among Indian youth, which might make the inhalant use rates reported artificially low, the Indian 8th graders were compared with a sample of non-Indian 8th graders who have been surveyed by the authors since 1981.

Findings. Since the 1983 survey, there had been a decrease in lifetime inhalant use among 12th graders, and a slighter decrease for 8th graders. Levels of inhalant use were still comparatively high. At both age levels, Indian youth had consistently higher rates of lifetime inhalant experimentation than non-Indian youth; for seniors, nearly 2.5 times as high. However, in 1985, the gap lessened considerably.

Recent use was generally much lower than lifetime use. Less than 15% of 8th graders and 4% of seniors were using inhalants in the past month in the last period of the survey (1984-85). If a youth had not used in the past month, he or she was probably not at much risk. However, Indians still reported higher levels of recent use than non-Indians and recent use had not declined like lifetime use, especially among 8th graders.

The age pattern indicated that such use by Indian youth begins when they are very young--the predisposing factors are well in place by the 4th and 5th grades.

Among both Indians and non-Indians, inhalants were more likely to be used by younger students, with use dropping off with age. The average age of initiation was 11.92, compared with 12.25 for marijuana and 12.56 for first getting drunk. The greatest increase of use occurred between 11 and 13 years. If inhalant use had not occurred by age 13, it likely never would, in marked contrast to the pattern for marijuana and alcohol. About 15% of 4th-6th graders had already had some experience with inhalants. Use at the earlier ages appeared to have consistently increased from 1980 to 1985. This may have been due to a "ripple effect" in which the radical increases in use among 12th graders up to 1980 and among 8th graders up to 1982 were now occurring among elementary students. As use declines among older children, it is likely that it will also ripple downward.

Rates of use for 8th-grade females were still nearly the same as males, but among seniors there was a distinct lower lifetime prevalence rate reported by females than males, probably because female users had dropped out of school by that time or because females reduced their use very quickly after 8th grade.

Conclusions/Implications. There is some basis for the perception that Indian youth are more susceptible to inhalant use than their non-Indian peers. The decrease in lifetime prevalence for inhalants is encouraging and consistent with the important decreases found for alcohol and marijuana through 1983, and smaller decreases for six other drugs, found by Beauvais, Oetting, and Edwards (1985). This may reflect the general shift toward lower drug use found by the national survey of high school seniors. But the higher rate of recent use among both 8th- and 12th-grade Indians than among non-Indians is cause for concern. Given the evidence for an earlier initiation in use for inhalants than for other drugs, prevention efforts need to start at an early age. There is also a significant number of school dropouts who are likely to be chronic inhalant users. Finally, prevention efforts need to take into consideration the larger number of female users.

BINION, ARNOLD; MILLER, C. D., et al. 1988. Rationales for the use of alcohol, marijuana, and other drugs by eighth-grade Native American and Anglo youth. ***International Journal of the Addictions*** **23(1):47-64.**

Rationales for alcohol, marijuana, and other drug use were examined among 25,000 8th-grade Indian and non-Indian students who voluntarily responded to a self-help drug use survey administered during the 1983-1984 academic year. The Indian students were from two reservations in the western United States and non-Indians from three small rural towns.

Rationales on the survey were developed, a priori, to sample four main areas: social situations, independence, dealing with emotion, and feeling drugged. Thirteen rationales were generated from these four main groups. The rationales contained 34 justification items, with two or three items per rationale. Internal consistency reliabilities for the 13 rationales ranged from 0.72 to 0.86 for Indians and from 0.74 to 0.90 for non-Indians.

Findings. There were important differences in the reasons for drug use given by Indian and non-Indian 8th graders. These reasons differed according to the drugs used and ethnic group membership. Differences were found between reservation Indian and rural non-Indian rationales for alcohol, marijuana, and other drug use. A majority of both Indian and non-Indian 8th graders indicated that they used drugs to enhance altered and pleasant affective states, for excitement, for parties, to be with friends, to relax, and to handle negative affective states including worries and nervousness. Indian youth also used drugs to cope with boredom. Surprisingly, unlike non-Indian youth, there was a paucity of rationales for the use of drugs other than alcohol and marijuana by Indian students. It was unclear what rationales are used by those who use other drugs. This suggests that Indian youth may not have developed a coherent cognitive framework that justifies this particular deviant behavior. The interrelationships between these rationales produce a situation where powerful positive and negative reinforcements are simultaneously present.

Conclusion. Interventions will have to be impactful and pervasive in order to counter the many positive and negative rationales associated with drug use. They will have to produce positive affective states, facilitate social interactions to fulfill the developmental needs of young adolescents, and enable the young adolescent to cope in constructive ways with negative affective states. Interventions will have to be multifaceted and include: (a) group and individual approaches; (b) social skills training and opportunities to be with other youth in a social setting; (c) training to cope with anxiety, nervousness, and anger; and (d) support systems for dealing with feelings of being unloved, unwanted, and lonely. It would also appear that the combined efforts of families, schools, churches, social agencies, and other programs will be required in order to offset the positive experiences associated with drug use among 8th graders.

BLUM, ROBERT W.; HARMON, B., et al. 1992. American Indian--Alaska Native youth health. *Journal of American Medical Association* 267(12):1637-44, Mar 25.

To assess risk behaviors, health problems, worries and concerns, and resiliency-promoting factors among American Indian-Alaska Native adolescents, a total of 13,454 7th through 12th grade youths were surveyed in 1989 in nonurban schools from eight Indian health Service areas nationwide. The study used a revised version of the Adolescent Health Survey, a comprehensive, anonymous, self-report questionnaire with 162 items addressing 10 dimensions of health. The instrument had been used previously on more than 36,000 teenagers in Minnesota and 5,0500 youths in Alaska. Data from these surveys are used for comparison.

Findings. Poor physical health was reported by 2% of the study sample and was significantly correlated with social risk factors of physical and/or sexual abuse, suicide attempts, substance abuse, poor school performance, and nutritional inadequacies. Injury risk behaviors included never wearing seatbelts (44%0, drinking and driving (37.9% of driving 10th through 12th graders), and riding with a driver who had been drinking (21.8%). Physical and sexual abuse prevalence was 10% and 13%, respectively, with 23.9% reporting physical abuse and 21.6% of females reporting sexual abuse by the 12th grade. Almost 6% of the entire sample endorsed signs of severe emotional distress. Eleven percent of the teens surveyed knew someone who had killed himself or herself, and 17% had attempted suicide themselves. Sixty-five percent of males and 56.8% of females reported having had intercourse by the 12th grade.

Weekly or more frequent alcohol use started early and rose from 8.2% of 7th graders to 14.1% of 12th graders; for males, the survey noted an increase in regular alcohol use of 3% to 5% a year to 27.3% by the 12th grade. However, the majority of youth reported that they either never drink (59.8%) or drink only occasionally (20.75). Just over 10% were considered potential problem drinkers based on at least weekly drinking, with an average consumption of three or more drinks each time. As the quantity and frequency of drinking increased, so did the adverse correlates, with problem drinkers most likely to have sustained an alcohol-related or drug use injury, experienced school problems or had family problems associated with AOD use, or ever have attempted suicide.

For every grade level after 7th, females were more likely to be daily cigarette smokers than males, rising to 17.8% in high school (vs. 15% for males). In contrast, daily use of smokeless tobacco was consistently higher for males.

The most prevalent use of other substance was for marijuana, peyote, and inhalants. There was little gender variation in use of each. Marijuana use ranged from 31.2% of junior high students to 50.1% of high school. Inhalant use was reported by 13.8% of junior high students, and declined markedly in high school.

For each variable measured, rates were much higher for American adolescent than those for rural white Minnesota youth, except for age at first intercourse and alcohol use. More Minnesota youth drank alcohol daily or weekly than did the Indian youth, regardless of gender. However, the pattern of heavy drinking among Native males by the 12th grade was in excess of rural Minnesota youth and they were markedly heavier abusers of every other drug. The high alcohol use at young ages and the consistent rise through high school distinguish American Indian teens' patterns of use from their white peers. Furthermore, for American Indian young adults, there is no evidence of a decline in use that occurs among white young adults.

Conclusions. The majority of Native youth are not faced with significant health risks. However, a sizable minority do. American-Indian–Alaska Native adolescents reported high rates of health-compromising behaviors and risk factors related to unintentional injury, substance use, poor self-assessed health status, emotional distress, and suicide. Three is little doubt that even among the young who are the most successful (e.g., those who remained in school), there appears to be a sense of hopelessness, as reflected in the high rates of substance abuse. Interventions must be culturally sensitive, acknowledge the heterogeneity of Indian populations, be grounded in cultural traditions that promote health, and be developed with full participation of the involved communities.

BOYD, GAYLE. 1987. Use of smokeless tobacco among children and adolescents in the United States. *Preventive Medicine* 16(3):402-21.

Data collected by National Cancer Institute grantees on the use of smokeless tobacco by youth are reported. Self-reports were collected from over 43,000 students from grades 4 through 11 in 16 locations in the United States and 1 location in Canada. Lifetime and recent use of smokeless tobacco are reported by location, sex, grade level, and ethnic group. Use of smokeless tobacco increased with grade level. Typically, 40% to 60% of males had tried it, and in most locations, 10% to 20% of older male youths reported recent use. With the exception of Native Americans, rates of use among females were lower than those among males. Use was highest among Native Americans and lowest among blacks and Asians. Smokeless tobacco use by Hispanics was comparable to that by whites. Collectively, the data indicate that large numbers of male youths in many areas of the US are using smokeless tobacco. In light of recent research on the health consequences of using it, the health of these youth may be endangered.

CARPENTER, RICHARD; LYONS, C.A.; & MILLER, W.R. 1985. Peer-managed self-control program for prevention of alcohol abuse in American Indian high school students: A pilot evaluation study. *International Journal of the Addictions* 20(2):299-310.

A peer-managed self-control program as a secondary prevention intervention to teach responsible drinking was pilot tested with 30 American Indian teenagers from 13 tribes attending a single high school who were assessed at high risk because of staff-perceived emerging drinking problem. Previous interventions had generally focused on primary prevention, abstinence, or alcoholism education, but provided few guidelines for maintaining responsible drinking among those who are already drinking and thus potentially unresponsive to a no-use message.

Students were randomly assigned to one of three treatment groups incorporating combinations of self-monitoring, peer-assisted self-control training, and alcohol education. Each group was assisted by two peer counselors. Followups were conducted at 4, 9, and 12 months posttreatment. The three treatment groups were compared using one-way analyses of variance, including age, alcohol knowledge, self-esteem, and attitudes toward abstinence. Self-report data were corroborated by breath tests and official records.

Findings. Significant decreases were observed in quantity and frequency of drinking and in peak blood alcohol levels. These improvements were maintained at all posttreatment followups through month 12. No differences among the treatment groups were found, indicating that minimal and full program interventions had comparable effects.

Conclusions. Although the data have shortcomings (they are based primarily on self-reports and a small sample), they provide encouragement for further exploration of the behavioral self-control preventive intervention model. Further consideration of the model is merited for several reasons: (1) Programs are most often directed toward those who already drink, and who are unlikely to respond to methods emphasizing a disease model or advising permanent abstinence. (2) The present approach, focused on self-control, provides specific guidelines and procedures for achieving goals of responsible drinking. (3) Self-control training appears to be effective when offered in educational, self-help, or other cost-effective intervention formats that are highly amenable to prevention applications.

Important factors in successful implementation include careful training and selection of peer counselors, on-going program evaluation, and participation of the whole community and school administrators.

DICK, RHONDA W.; MANSON, S.M.; & BEALS, J. 1993. Alcohol use among male and female Native American adolescents: Patterns and correlates of student drinking in a boarding school. *Journal of Studies on Alcohol* 54:172-177.

Data is presented from the first wave of a longitudinal study on a sample of Native American students at a tribally-administered boarding school funded by the Bureau of Indian Affairs. the first wave of data was collected in January 1988. Data was collected from 188 students (52% female), distributed almost evenly across grades 9-12, 84% of whom belong to the five tribes neighboring the school.

Self-report questionnaires were used to elicit data on frequency, quantity, intensity, and social context of respondents' alcohol use; any intervention experience; stressful life events; religious activity and beliefs; school experience; depression; social support from friends and from family.

Findings. Most students ($n = 162$, 86%) reported at least some alcohol use, and one third ($n = 63$) had used alcohol at least three times in the previous month (defined as moderate to heavy use). Half classified themselves between "moderate" and "very heavy" drinkers, 42% had consumed six or more drinks on a single occasion, and 45% reported they had experienced blackouts in the previous six months. Sixteen (9%) had received some treatment for alcohol abuse or dependence. The majority of respondents indicated either occasional binge drinking or frequent drinking of small amounts of alcohol, and 42% reported having gotten drunk at least once in the previous month.

Gender differences. Greater percentages of female students than males reported alcohol use on school days, both during the day and in the evenings. Similarly greater percentages of females than males reported blackouts.

Correlations. High familial support correlated with self-perception of lower use intensity, and with a lower rate of intoxication. Peer support did not correlate with any of the alcohol-use constructs. Reported frequency of stressful life events correlated positively with self-perception of use, and with the quantity-frequency index of alcohol consumption. Emotional distress correlated with self-perception of use, frequency of intoxication, and the quantity-frequency index.

Multiple-regression analyses were run to assess relationships between each of the alcohol use indices (quantity-frequency, self-perception of use intensity, and frequency of intoxication) and depression, social support, and stressful life events. Significant relationships were only found between familial support and both the quantity-frequency index and frequency of intoxication, and a marginal relationship was found between peer support and frequency of intoxication.

Conclusion. These analyses showed family support to have the strongest association with drinking patterns in this population. They also showed an association between stressful life events and the combined quantity and frequency of alcohol use. The relationships found are believed to be related to the environment of the study, a tribal boarding school.

EDWARDS, E. DANIEL, & EDWARDS, M.E. 1988. Alcoholism prevention/treatment and Native American youth: A community approach. *Journal of Drug Issues* 18(10):103-115.

The serious problem of drinking in pre-adolescent and adolescent Indian youth is examined in the light of specific community contexts; poor socioeconomic conditions; family, school, and peer-group pressure; alienation; and personal adjustment problems. Community approaches for combating problems of alcohol abuse among Native American youths should involve adolescents, their families, and informal and formal organizations in both primary and secondary prevention programs. Primary prevention interventions promote alternative activities to drinking and emphasize positive feelings of self-esteem and identity. Secondary prevention alcoholism programs provide information regarding alcohol while encouraging responsible decision making regarding drinking behaviors.

Task groups can be used to reinforce and support secondary prevention programs. They can assist adolescents who have had some experience with drinking behaviors to learn more about the influence alcohol has on their total functioning and can provide them with skills to make responsible decisions regarding drinking behaviors. Such groups could also be important in meeting treatment needs and in effectively establishing and reinforcing tribal and Indian values systems related to alcohol. Research suggests that family communication and community-based approaches that deal with the unique contextual framework of the particular area are helpful in engendering individual, group, and societal pride.

Proposed methodologies include community-specific questionnaires, which are developed with input from adult tribal members, mental health agencies, community institutions, and tribal governmental agencies. The results of the questionnaires are subsequently tabulated, interpreted, and reported back to the community.

The Ignacio, Colorado, Indian Youth "Drug Busters" and the Chevak Village Youth Association of Alaska are two organizations that have effectively applied task group concepts in specific communities; the Intermountain Intertribal project combined peer-group and educational counseling with a community focus.

FINLEY, BRITT. 1989. Social network differences in alcohol use and related behaviors among Indian and Non-Indian students, grades 6-12. *American Indian Culture and Research Journal* 13 (3-4):33-48.

The differences in the social network of American Indian and non-Indian students in regard to alcohol use were examined among 2,234 students in grades 6-12 in western Montana. The school district was located near an Indian reservation. The stratified random sample was drawn from approximately half of each grade. Of the total sample, 70 wee Indian (29 in grades 6-8, 18 in grade 9, and 21 in grades 10-12. The non-Indians were 98% White. The results indicated that the prevalence of alcohol use by Indian students is higher, as was the extent of personal knowledge of teenage alcoholics and the prevalence of drinking by the friendship group, and frequency of drinking consequences. Indian females were often more likely a the earlier grade to report consequences. Over half of the Indian students had been drunk six times or more in the past year. Despite this high rate of drinking, not one student had encountered social criticism two or more times in three potential areas (school, parents, dates, friendship, drinking an driving). The frequency of being with a drinking driver was also more prevalent for Indian students. Indian parents were 10% more likely than non-Indian parents to be the source for obtaining alcohol. This suggests tolerance for drunkenness.

GILCHRIST, LEWAYNE D.; SCHINKE, S., et al. 1987. Skills enhancement to prevent substance abuse among American Indian adolescents. *International Journal of the Addictions* 22(9):869-879.

The use of skills enhancement with American Indian youth has seldom been evaluated, although literature in several areas supports the use of a skills enhancement model for helping Indian youth delay the onset of substance use, minimize the extent of their use, and reduce the chances of permanent disability as a consequence of use. A culturally tailored 10-session skills enhancement program was provided between 1984 and 1985 to 102 Indian youth (mean age = 11.34; 49% female) living in seven urban and rural sites in the Pacific Northwest. Subjects completed screening for demographic information and current substance use, including alcohol, marijuana, tobacco, and inhalants. Subjects were randomly assigned by site to intervention or control conditions. Demographic and baseline drug-use data for the three intervention sites and the four control sites (one urban and two rural) were comparable. Subjects at the experimental sites received ten 60-minute skills enhancement training sessions. Preventive intervention was delivered by a two-person team consisting of one Indian research staff member and selected indigenous teachers, school counselors, and drug and alcohol treatment staff members. Pretest, posttest, and six-month follow-up measures quantified variables in self-esteem, drug knowledge and attitudes, and interpersonal behavior.

Findings. At six-month followup, intervention condition subjects had better knowledge of drug effects, better interpersonal skills for managing pressures to use drugs, and lower rates of alcohol, marijuana, and inhalant use, compared with test-only control condition subjects. Intervention condition subjects were less likely to label or consider themselves users of these substances. Consumer satisfaction feedback regarding the program's sensitivity to American Indian culture, immediate applicability to life, and prevention effectiveness also supported the value of the skills enhancement approach. However, no differences between the intervention and control groups were found for self-esteem or for drug attitudes.

Two possibilities may explain the program's unexpected failure to affect self-esteem scores: (1) for Indian youth, the methods reduced substance abuse through some other pathway than increasing self-efficacy and self-esteem; or (2) more likely, the measure of self-esteem in the study was too generic to pick up changes in self-efficacy and substance-abuse-specific self-esteem that did occur.

Conclusions. Conclusions are limited because of the small sample size and short follow-up period, but data indicate that this approach can delay onset of substance abuse in some Indian adolescents. Program planners and prevention researchers can build on this data in developing skills-based substance abuse prevention programs (Alaska, the Southwest, and other areas of high Indian population are recommended). Longitudinal data and larger sample are needed in future research.

HARRIS, MARY B., & FORD, V.L. 1988. Tobacco use in a fifth-grade southwestern sample. *Journal of Early Adolescence* 8(1):83-96.

Investigated tobacco use, exposure to tobacco, and related attitudes of 204 male and female Anglo-American, Hispanic, and Native American (Navajo and American Indians from two pueblos) 5th graders from 6 rural New Mexico schools. Subjects completed a tobacco use questionnaire prior to completing a cardiovascular health education curriculum. Subjects at one school completed a test following the program. Due to the small number of Anglos (*n* = 8), significance testing was only done for the Hispanics and Indian groups.

Findings. Consistent with other research, a sizable number of 5th graders had experimented with tobacco. Substantial differences in smoking and smokeless tobacco use were found for children who differed in age, ethnicity, and gender. Results indicate a significantly higher level of smoking among Pueblo Indians, while Navajo Indians reported a significantly higher level of chewing or dipping. 52% of Navajo reported chewing, compared to 27% and 13% from the Pueblos sites, and 32% of Hispanics and 25% of Anglos.

Boys reported a greater incidence of smokeless tobacco use than girls, as well as higher levels of both smoking and chewing.

Hispanics were more likely than Indians to report that their mother and others they know smoke, but less likely to report having siblings or good friends who smoke.

Following the administration of a cardiovascular health education curriculum at one Pueblo school, there was reported significant decreases in the anticipated likelihood of smoking and increase in believing that smokers are dumb and foolish, and 8% said that they reduced their smoking. Results indicate a significant decrease in the number of subjects who planned to smoke in the future.

Conclusion. This suggests a possible need to design tobacco use curricula tailed to the specific groups being taught.

KING, JEFF; BEALS, J., et al. 1992. A structural equation model of factors related to substance use among American Indian adolescents. *Drugs & Society* 6:253-268.

Data is presented from the third biannual wave (November 1988) in a longitudinal survey of Native American high school students at a tribally-administered boarding school with enrollment of about 200. Three-quarters of the enrolled students live in school dormitories year-round, and most come from five local tribes, and homes within the state. The sample included 177 students who completed the survey, 84 males and 93 females, ranging in age from 12-19 (average = 16). A self-report questionnaire was administered twice during the school year at the same time of the morning. Analyses was limited to data from questions on alcohol and drug use, depression, social support, and stressful events.

Life stress was expected to predict perceived social support and depression, as well as levels of substance use. Family support and friend support were both expected to predict levels of depression and substance use, and to mediate the effects of stress on depression and on substance use.

Findings. ***Alcohol.*** Survey data indicated that 87% of the respondents had tried alcohol, and 75% had used alcohol at least once in the previous year. One quarter reported using alcohol every weekend, and 54% indicated that they have at least six drinks when they drink—73% of these said they drank until they were high. Heavy or very heavy drinking was reported by 14%.

Marijuana. Data revealed that 74% of the sample had tried marijuana, and 47% reported using it at least once a month. Of the monthly users, 58% (24% of total sample) reported that they had used it 3 or more times in the previous month.

Inhalants. One-quarter of the sample reported having tried inhalants, and one tenth reported at least monthly use.

Other drugs. Some use of other illicit drugs was reported for the previous month by 16% of the sample, and 45% of those students had used other drugs 3 or more times in the same period.

Life Stress Factors. Life stress was found, as hypothesized, to be significantly related to depression and to measures of substance use in all four categories. The higher the life stress measure, the more likely the depression measure and use measures were likely to be. Likewise, family support was negatively related to life stress. Social support did not, however, predict levels of depression or of substance use. Greater perceived family support did predict lower levels of alcohol use. Gender was not significantly related to any of the constructs. It must be noted that while these relationships were statistically significant, the correlations were small.

Conclusions. Students with low life stress perceived greater family support and were less likely to use alcohol than those with higher life stress, yet social support did not appear influential in depression or drug use. This latter finding goes against the conclusions of other studies. Native American youths may use social support differently than do other youth, and the boarding school setting may also affect the reliance on family and social support. Longitudinal analysis of the cross-sectional data analyzed in this study should provide better understanding.

MAY, PHILIP. 1986. Alcohol and drug misuse prevention programs for American Indians: Needs and opportunities. *Journal of Studies on Alcohol* 47(3):187-195.

General statistics indicate that alcohol and drug use vary tremendously from one tribe to the next. Many local officials, however, are not aware of the extent of the problem. There is an overwhelming need to define the nature of the problem accurately with regard to specific risk in populations and subpopulations for effective intervention. Alcohol-related morbidity and mortality statistics indicate that the consequences of acute misuse among young Indians, which ranges from episodic to prealcoholic, takes a greater toll in death and injury than does chronic misuse. Regarding susceptibility, the evidence indicates that lack of adequate social and personal skills increases the likelihood of eventual alcohol and substance misuse, particularly in adolescence and the early twenties.

Because of the unique social and cultural circumstances in which many Indians live, an aggressive series of programs needs to be launched. The current status in many communities dictates intervention at three levels. First, high mortality and morbidity rates must be reduced through creative and innovative intervention with the social and physical environment. Alcohol legalization and other issues are discussed as distinct possibilities. Second, educational programs are needed to elevate the knowledge of American Indian communities about alcohol and drug misuse. Education should be specifically oriented to improving ability to deal with early developmental problems that might lead to misuse. Third, American Indian rehabilitation programs need to be provided with more resources and need to be carried out more effectively. Increased use of both traditional tribal strengths and modern treatment modalities is promising. Rehabilitation programs may be even more important in the future if mortality reduction programs are successful.

The major target of the educational programs should be youth. Furthermore, because Indian alcohol and drug misuse is related to uncertainty and integration problems, "a major, if not the dominant, component of the youth-oriented prevention programs should emphasize a social learning model that builds self-esteem and coping skills in individuals and their peer groups. Using various techniques such as peer participation and value reinforcement, the goal of these programs must be the building of self-esteem and confidence while imparting alcohol and drug information" (p. 192). However, before these programs can be effective, the community as a whole must be educated to overcome their conservatism and sensitivity to this issue.

MONCHER, MICHAEL S.; HOLDEN, G.W.; & TRIMBLE, J.E. 1990. Substance abuse among Native American youth. *Journal of Consulting and Clinical Psychology* 58(4):408-415.

Relevant social epidemiological data were briefly reviewed followed by a discussion of culturally relevant etiological factors. Current strategies for identification of youth at high risk for substance use were highlighted, concentrating primarily on the theoretical and methodological aspects appropriate for Native Americans. In this context, data from a survey of 1,147 Native American students in grades 4 and 5 are reported. Recent literature reviews have focused primarily on acculturation theory and ethnography.

Samples of 7th- to 12th-grade American Indian youth, obtained from diverse tribal groups between 1975 and 1987, indicated that prevalence of reported lifetime use of most substances had increased. A 1986-87 study among Native American high school seniors reported the following percentages of use in the previous month: alcohol (58.8%); marijuana (36.5%); inhalants (1.8%); cocaine (3.7%); stimulants (9.1%); cigarettes (38.3%) and smokeless tobacco (31.4%).

Given that Indian youth tend toward earlier experimentation with a number of substances than does the general population, examination of culturally-specific correlates is needed to explain additional variance. The data were taken from a sample of Native American youth in the Western United States ($N = 1,147$; 93% Indian; 7% White). Students in grades 4 and 5 from reservations and tribal communities throughout the Northwest were recruited through schools, tribal councils, and community organizations. Refusal rates were 2% across the sample. Biochemical validation was obtained for cotinine and thiocyanate. Correlations with self-report data were not available at the time the study was published. No procedures were used to assess self-report accuracy concerning other substances, however the "bogus pipeline" effect from the testing should have enhanced data reliability.

The approach maintains that if a multitude of personal and environmental variables account for some unique variance explaining youth substance use, then a subject possessing or exposed to multiple factors should be at higher risk for use. Sixteen "risk" categories were assessed by a battery of self-report items. The categories include use of smoked tobacco; use of smokeless tobacco; family smoking; peer smoking; family smokeless tobacco use; peer smokeless tobacco use; experimentation, intentions to use, and peer use of alcohol, inhalants, marijuana, and cocaine/crack; quality of family relationship; school adjustment; non-substance-related deviant behaviors; perceived deviance in school environment; cultural identification; and religiosity. The survey was influenced by the risk factor approached which examined correlations between the number of risk factors and lifetime use. In addition, results on tobacco use compared to the general population student study were reported.

Findings. There were significant correlations between the subject's total risk score and reported use of substances (smoked and smokeless tobacco, alcohol, inhalants, marijuana, and cocaine/crack, all $p < .001$). Correlations were highest between risk factor totals and lifetime use of smokeless tobacco ($r = .45$); of smoked tobacco ($r = .54$); and of alcohol ($r = .54$).

With very few exceptions, higher numbers of risk factors indicated higher percentages of use during the past year across all substances. Of those youth with 10 or more of a possible 16 risk factors, over 90% were currently using beer or wine, nearly 80% were currently using marijuana. During the past year, almost 50% of subjects reported inhalant use, and nearly 30% had used cocaine/crack.

These data reaffirm the uncharacteristically high rates of substance use among Native American youth. Data from a separate, demographically representative, older, high-risk, school-based population in the Western United States ($N = 2,005$) was compared to the present sample on variables related to tobacco (Kandel, & Logan, 1984). American Indian youth exhibited substantially higher rates across all categories examined. These data, collected concurrently, are disquieting if tobacco use is a significant correlate in predicting future substance use. For example, over 28% of the Indian sample indicated an intention to smoke in high school, and 36% said they might smoke as adults. The more "generic" school-based sample reported intentions of 1.5% and 2% respectively. In the Indian sample, intentions to use smokeless tobacco in high school and as adults were 21% and 19% respectively. Almost 20% of that sample reported intentions to smoke or use smokeless tobacco in the next 12 months.

These data also indicate substantially higher sibling tobacco use rates than were reported by the more demographically representative school-based sample. Over 14% of the Indian sample reported brothers who smoked in contrast with only 5% of the generic sample, and almost 25% had brothers who used smokeless tobacco. Over 16% of the Indian subjects reported sisters who smoked, three times the number in the non-Indian school-based sample (5.5%). Almost 10% reported sisters who had used smokeless tobacco at time of administration of the test.

Regarding parental rates, over 40% of fathers, mothers, and other relatives smoked cigarettes. Smokeless tobacco rates were considerably lower, consonant with the literature indicating a drop in smokeless tobacco use and a corresponding increase in smoked tobacco use in adulthood. Also alarming, and perhaps reflective of the need for community intervention, are the rates at which both smoked and smokeless tobacco products are provided to youth by parents and siblings. Almost 16% of the subjects reported having been given smokeless tobacco by their parents or primary caretakers. This figure increased to 17% by their siblings, and 23% by other relatives and family friends. Cigarettes were given to almost 7% of the sample by their parents, 12% by their friends, and 16% by other relatives and family friends.

Conclusions. These data provide some evidence of the utility of the risk-factor approach in identifying youth at risk for substance use or abuse. Risk scale scores were strongly correlated with reported use across a range of substances.

The highest correlations with total risk scores were obtained with reported lifetime smokeless tobacco use, followed by lifetime smoked tobacco use and lifetime alcohol use. The smallest correlation was obtained for lifetime cocaine/crack use. This is consistent with the high frequency of tobacco use in this young sample, compared with the more limited use of harder substances including inhalants and cocaine/crack.

These results may have implications for future risk assessment models specific to this population, given its disproportionately high early use of tobacco products. Future studies might longitudinally assess American Indian youth with differential early rates of tobacco use to ascertain whether those using with greater frequency do go on to use other substances at higher rates than those youth not involved with tobacco.

On the scales of knowledge and deviance, the Indian sample did not report significantly differently from the non-Indian school-based sample. This strengthens the inference that behaviors regarding use of tobacco products are normative and pervasive in the Indian sample, related neither to lack of knowledge concerning their detrimental health effects, nor, as is traditionally believed to be the case in majority cultures, to propensity for involvement in deviant or risk-taking behaviors.

These data are not representative of all American Indian youth. Vast intertribal and geographic differences exist within this population, and must be accurately assessed.

MURRAY, DAVID M.; PERRY, C.L., et al. 1987. Seventh-grade cigarette, alcohol, and marijuana use: distribution in a north central U.S. metropolitan population. *International Journal of The Addictions* 22(4):357-76.

Tobacco, alcohol, and marihuana use were examined among 4,599 7th-grade students from a north central U.S. metropolitan community. Participation exceeded 94% and biological testing was used to increase the disclosure of drug use during the survey. Drug use was related to age, gender, race, family structure, and parental occupation in a series of logit analyses to identify high-risk groups. Significant associations were observed between drug use and each of the demographic factors; the likelihood of drug use increased by as much as 80-fold in subgroups defined by interactions among these variables. Native Americans, Hispanics, Black females, and adolescents whose mothers held white-collar jobs were substantially more likely to report drug use compared to other groups; females were generally similar to males in their level of use after adjustment for other factors.

These results suggest that multivariate analyses which consider higher-order interactions may more adequately model the distribution of drug use in adolescent populations, compared to those based on univariate or first-order multivariate techniques.

MURRAY, DAVID M.; ROCHE, L.M., et al. 1988. Smokeless tobacco use among ninth graders in a north-central metropolitan population: Cross-sectional and prospective associations with age, gender, race, family structure, and other drug use. *Preventive Medicine* 17(4):449-601.

Smokeless tobacco use was analyzed in relation to demographic factors and to past and current use of tobacco, alcohol, and marijuana in 4,249 ninth graders in the Twin Cities metropolitan area. The sample consisted of about 3,309 Whites, 449 blacks, 90 Asian, 75 Native Americans, and 39 Hispanics.

Findings. Smokeless tobacco use was found to be more common among males, particularly whites; among whites relative to blacks; among adolescents from one-parent households; and among those who reported current or prior use of cigarettes, alcohol, or marijuana. Smokeless tobacco use was also very common among the Native Americans and Hispanics sampled, although the Hispanic sample was quite small.

Lifetime use rates were: 62% Hispanic, 61% Native American, 46% white, 23% black, and 21% Asian. Past week use rates were: 31% Hispanic, 12% Native American, 11% white, 3% black, and 8% Asian. Native Americans had high lifetime prevalence rates, but past week prevalence rates were no higher than those of whites. It is suggested that since alcohol- and other drug-use rates have been similar among reservation and nonreservation youth, it may be that smokeless tobacco rates are about to climb sharply among Native Americans living in the city.

Gender differences were examined among the two largest racial groups in the sample: whites and blacks. White males were 6.0 times more likely to have ever used smokeless tobacco than white females and 4.2 times more likely than black males. However ever use is not strictly a white male phenomenon; there was also substantial exposure among black males and white females. The dominance of white males was even greater for use in the past week.

Conclusion. The results suggest that smokeless tobacco may be joining the list of common recreational drugs that have potential for both short and long-term danger to the adolescent user.

NEWCOMB, MICHAEL D.; MADDAHIAN, E., et al. 1987. Substance abuse and psychosocial risk factors among teenagers: Associations with sex, age, ethnicity, and type of school. *American Journal of Drug and Alcohol Abuse* 13(4):413-433.

Evidence indicating that there are numerous pathways to substance use has led several researchers to propose a risk-factor approach that hypothesizes that with increased exposure to those factors or influences known to promote or generate drug use, there is an increased chance of drug use or abuse occurring. Conversely, exposure to few risk factors should decrease the probability of drug involvement. The number of risk factors should be monotonically, perhaps linearly, related to the likelihood of substance initiation and involvement.

To evaluate this model, 12 risk factor variables were selected and tested on data obtained from 7th-, 9th-, and 11th-grade students ($n = 2{,}926$) in the Ventura County (California) School District. Differential exposure to and impact of risk factors on drug-taking behaviors were tested for differences by sex, age, ethnicity, and type of school attending. The 12 factors were selected on the basis of a review of the literature and previous research conducted on drug use which identified them as significant antecedents to drug use initiation or increased drug involvement. In developing the risk factor index, each factor was determined to be associated independently with drug use. These factors were:

- early alcohol intoxication
- perceived adult drug use
- perceived peer approval of drug use
- perceived parent approval of use
- absence from school
- poor academic achievement
- distrust of teacher drug knowledge
- distrust of parent drug knowledge
- low educational aspirations
- little religious commitment
- emotional distress
- dissatisfaction with life

Findings. The 12 variables explained over 50% of the variance in a measure of general drug use, but lacked effectiveness in accounting for different types of drugs. A unit-weighted, summed index of risk factors was linearly related to use and abuse (heavy use) of cigarettes, alcohol, cannabis, cocaine, hard drugs, and a composite substance-use score.

Patterns of Use. For the sample as a whole, the most widely tried substance was alcohol (77%) and the least was cocaine (14%). Males reported greater use of cannabis, alcohol, and drug use in general than females, who reported more cigarette use. All substances, except hard drugs, differ significantly in use by ethnic group, with the differences falling into a general pattern of American Indians and "Other" ethnics reporting the most frequent use of drugs, followed by Whites, Blacks, Hispanics, and Asians. Significant mean differences were found for all substances except alcohol by school type, with continuation school students reporting higher frequency of use of all drugs except alcohol.

Patterns of Risk Factors. There was no significant difference on the risk-factor index by gender; the number of risk factors increased significantly by grade level; American Indian and "Others" were exposed to significantly more risk factors than other ethnic groups; and students in continuation school had a significantly higher risk factor.

Association Between Risk Factors and Substance Use. The risk factor index was not equally effective at accounting for different types of drugs: it was most strongly related to alcohol and cannabis use; least strongly to cocaine. The only significant gender difference was a larger risk-factor correlation on cocaine use among males than females. The only significant differences by grade were significantly lower correlations between risk factors and cannabis use and cocaine use among 7th-grade students than 9th or 11th. Regarding ethnicity, there was no differential impact of risk factors on cigarettes, alcohol, or hard drugs. There were significantly smaller correlations between cannabis and the risk-factor index for Asians compared with American Indians, Whites, or "Others." Asians had a smaller correlation with cocaine use than Hispanics, White, or "Others." Whites had a significantly larger correlation with composite substance use than Asians or Hispanics. All correlations for the continuation students were larger than regular-school students.

Associations. Dichotomizing between abstainers or occasional users and abusers, for all substances, showed a marked increase of abuse by increasing number of risk factors. The index was strongly related to the frequency of heavy use or substance abuse. Seventy-one percent of those with seven or more risk factors abused at least one substance; they were from four to six times more likely to be substance abusers (depending upon the specific drug) than the general sample.

Conclusions. The results of this study provide further evidence for the usefulness of the risk-factor approach. The study's examination of four demographic characteristics found important status group differences in regard to drug use levels, exposure to risk factors, and the impact of this exposure on drug-taking behaviors.

OETTING, E.R., & BEAUVAIS, F. 1989. Epidemiology and correlates of alcohol use among Indian adolescents living on reservations. In: D. Spiegler.; D. Tate, et al., eds., *Alcohol Use Among U.S. Ethnic Minorities*. NIAAA research monograph 18. DHHS Publication No. (ADM)89-1435, pp. 239-267. Washington, DC: US Government Printing Office.

Indian youths ($n = 2{,}349$) were compared with their non-Indian ($n = 18{,}251$) counterparts for lifetime use, recent use, age of first use, and daily use of alcohol over the past 10 years. The context of alcohol use was explored in the relationship of alcohol use to a variety of psychological and social factors, including cultural identification, family relationships, school adjustment, peer encouragement and sanctions, personal adjustment, tolerance of deviance and deviant behavior, and expectations for the future.

Each year 5 or 6 tribes from different parts of the country that the authors believed were sufficiently diverse geographically, culturally, and socioeconomically to contribute to a representative sample were identified. The present sample consisted of 2,1644 7th- to 12th-grade Indian youth surveyed in 1982. The sample was drawn from two widely separated large tribes.

The sampling procedure was not ideal, but the authors believe it is reasonably representative of what is happening with Indian youth who live on reservations. This belief is based on the following: (a) the data have been consistent over time—a sample of tribes from one year yields results very similar to a different sample of tribes taken the next year—suggesting both samples were reasonably representative; (b) changes in repeated surveys of the same tribe match samples from different tribes obtained at the same times; and (c) although Indian youth generally have higher rates of use, their trends across time parallel national trends of alcohol and drug use of non-Indian youth.

The data on Indian youth alcohol use were compared with several non-Indian groups. Precisely parallel data from national samples of non-Indian youth are not available due to variations in sampling procedures, item comparability, and other methodological differences. Sampling methods used in the two major national long-term data sources—the National Household Survey (Miller et. al., 1983) and the National Senior Survey (Johnson et. al., 1984)—are not applicable to the study of Indian epidemiology. The study uses 3 comparison groups: the 12- to 17-year-old sample from the National Household Survey ($n = 1{,}581$), the 12th grade students from the National Senior Survey ($n = 15{,}900$), and the Western non-Indian community ($n = 770$; Oetting, et. al., 1982). Although the data were from only 1 year of the Western, non-Indian sample, similar results were found across all years.

In examining alcohol use of Indian youth, it is important to consider several unique contextual or environmental differences that may affect how alcohol is used and viewed. Because of both historical and contemporary prohibition, the availability and distribution of alcohol among Indian youth who live on reservations is quite different from the rest of the United States. Until 1985, Federal law prohibited the sale of any type of alcoholic beverage to Indian people on or off the reservation. Prohibition also may help to explain why alcohol traditionally is not kept in the homes of Indian families—it is usually purchased and consumed within a short period of time. Although Federal prohibition has long been lifted, the pattern of alcohol use that evolved persists and is reinforced to a degree on some reservations that continue prohibition.

Many reservations legally prohibit the sale of alcohol; others even ban possession within reservation boundaries. These restrictions lead to clandestine activities to obtain alcohol, including thriving bootlegging operations and routine "runs" to reservation border towns to purchase and/or consume alcohol. This practice feeds into the stereotype that Indians are preoccupied with alcohol. Less visible to observers are the Indians who remain on the reservation and have little to do with alcohol.

More important than the patterns of alcohol use, are the attitudes that are developed. A selective banning of sales and even use for a particular ethnic group must have some effect on one's perceptions. Selective prohibition reaffirms the long-standing stereotype that Indian people are not responsible with alcohol, and causes some resentment toward a policy that, based on ethnicity alone, grants rights to some people, but not others. People who are told continually that they are not capable of controlling their behavior regarding alcohol may in time, begin to believe it.

Indian youth seem to develop some peculiar attitudes about drinking and about their own ability to make choices about their behavior. Some youths "fatalistically" feel they must drink in order to be "real Indians." Once this group identity is established, it is difficult to resist alcohol for fear of not belonging. Conversely, other Indian youth reject the concept of the "drunken Indian" and do not want to be alcoholics. Although Indian youth feel this pressure, the effect it has on their drinking is unknown.

Research itself may affect how Indian people view alcohol use and abuse. When the focus is on the negative, Indian people feel singled out as uniquely prone to social problems. Behind the much of the research are two assumptions: that all Indians drink; and that something idiosyncratic is happening outside researchers' understanding of drinking behavior in general. According to this report, neither assumption is necessarily true. One explanation is that the context of alcohol use on reservations has many elements that differ from non-Indian society, and that the effect of these elements on how Indian youth view and use alcohol almost certainly influences their drinking patterns.

Findings: *Drunkenness*. At both grades 8 and 12, a greater percentage of Indian than non-Indian youth reported getting drunk, and a greater percentage of Indian 12th graders reported having "blacked out" than non-Indians, particularly at the high frequency rates.

Age of First Intoxication. About 25% of both groups (Indians, n = 185; and non-Indians, n = 770) reported that they became drunk for the first time prior to age 13. Another 15% were first intoxicated between ages 13 and 14. The initiation curves for Indian and non-Indian youth were remarkably similar up to age 15. Although more Indians than non-Indians try alcohol before the senior year, Indians and non-Indians experience intoxication for the first time at about the same age. However, Indians tend to get drunk more often, with divergence increasing after age 15.

Gender Differences. At age 12, 25% more males reported having been drunk than females. But as Indian females age, the number who have been drunk surpasses both non-Indians and converges on the male Indian rates. It would appear by age 20 that equal numbers of Indian males and females have been intoxicated at least once.

Other Drug Use. As the rate of alcohol drinking increases, so does the rate of use of other drugs.

Peer Cluster Theory and Adolescent Alcohol Use. The author's peer cluster theory is designed specifically to explain and predict the alcohol use of adolescents. While respecting the physiological potency of alcohol, peer cluster theory postulates a set of psychosocial factors that make some people particularly susceptible to alcohol involvement and others particularly less susceptible. Many of the characteristics are social, relating to the youth's environment. For example, poverty, lack of opportunity, and family disorganization can establish a potential for alcohol involvement. Conversely, a strong family or extended family, potent family sanctions against using alcohol, or a family that has a meaningful stake in Indian culture, may inoculate and protect against alcohol abuse.

Other important characteristics are internal to the individual: personality characteristics, attitudes, and beliefs. Psychological factors such as depression or a belief system that does not see cheating, lying, or stealing as wrong are more likely to lead a youth to alcohol abuse. In contrast, a more self-confident youth or one who wants to be seen as a "good person" is less likely to be heavily involved with alcohol. These social and psychological forces interact to either create a potential for serious alcohol abuse or inoculate a youth against alcohol abuse.

Although these psychosocial precursors are important, peer interactions are likely to determine the actual use of alcohol, including how, when, where, and how much youths drink. Initiation (into getting drunk) is an important function of the peer cluster. Another important function is to provide access to alcohol. Non-Indian youth often obtain alcohol from home or from other adults; it is readily available in the community. For Indian youth, peers are likely to provide the alcohol directly.

"Peer groups" and "peer clusters" are different concepts. A peer group includes any formal or informal group with which a youth associates, such as the eighth grade class or football team. A peer cluster is usually a smaller, cohesive group with whom the youth spends time. A peer cluster does not necessarily have a negative influence; it can reject alcohol use and drunkenness.

Psychosocial Characteristics and Alcohol Use of Indian Youth: REASONS FOR ALCOHOL USE. According to peer cluster theory, the members of a peer cluster are hypothesized to share their ideas and beliefs about alcohol and to develop very similar reasons for its use. These reasons become the stimuli and the excuses for using alcohol. As yet, the authors cannot show how the structure of these reasons fits with the formation of peer clusters.

Over 30% of Indian youth stated that alcohol is "part of being at a party," and nearly 30% stated that they use alcohol because "there is nothing else to do around here." These responses provided some immediate insight into why many Indian youth drink. The reservation environment offers limited recreational resources, particularly for youth, and drinking is something pleasurable for them to do. Hence, it is not surprising that many Indian youth drink.

Over 30% of Indian youth stated that alcohol is used "to get rid of unhappy feelings." Almost one-fourth stated that it "helps me get rid of my worries" and "helps me feel less sad." One-fifth said that alcohol "helps me relax at a party" and "makes me less nervous." These responses may indicate relatively more problematic drinking behavior, as some research has found that persons who take alcohol for relief of emotional symptoms are much more likely to progress to alcoholism than those who use it predominantly for social reasons.

Low on the list of reasons for using alcohol are those related to anger, rebelliousness, and acting out. However, even these reasons were endorsed by nearly 10% of the sample. Peer cluster theory indicated that youth who state these reasons have a high probability of being members of the same peer clusters, support each other in these beliefs, and use alcohol together in association with these beliefs. Individual impulse control is already likely to be weak in youth who list anger and rebelliousness as reasons for drinking. Impulse control is already likely to be weak in youth who list anger and rebelliousness as reasons for drinking, and it is weakened even further by group interactions that involve a tendency to stimulate each other and reinforce "wild" behaviors. Alcohol exacerbates this weakened impulse control, first because alcohol is likely to reduce self-control and interfere with judgment, and second because youth with these feelings often use alcohol (and other drugs) in large amounts to help them do "crazy" things. Therefore, this group has a high probability of having problems with the law, driving while intoxicated, getting into accidents, and engaging in other dangerous and debilitating behaviors.

Family. One of the strengths of Indian culture is a strong belief in family, family relationships, and the extended family. The most important function of a family in preventing alcohol involvement is to provide strong sanctions against its use. When youth believe their families would try to stop them from drinking and getting drunk, they are less likely to get involved in peer clusters that use alcohol heavily ($p < .000$). If both parents are home, the youth has a slightly better chance of not being involved in alcohol and a slightly lower chance of being heavily involved in alcohol. Otherwise, the differences are so small the cannot be interpreted. Youth from either intact or broken families can become involved in alcohol, because the extended family takes over the role of the immediate family if the immediate family is not intact. Strong family relationships are also related to alcohol use, although, the correlation is relatively small. However, other research suggests that family relationships play a more central role than depicted here.

The socioeconomic status of the family usually has some bearing on whether a youth will encounter problems. Three measures were used to assess socioeconomic status. Education was scored as the highest grade reached by either the father or the mother. Economic status was assessed by questions asking whether adult members of the family have "good" jobs and whether they can earn "good" money. A third measure assessed the youth's own economic and educational expectancy (e.g. youths were asked if they expect to graduate from high school, to be respected, and to earn enough money to buy the things they want). Although the correlations were low, family economic and education status related significantly to alcohol involvement; if the family had a better income, the youth was somewhat less likely to get involved with alcohol ($p < .012$). The youth's own expectations for the future were not related to alcohol involvement ($p < .276$, ns). This finding was unexpected because other studies have found that youth with poor expectancy are somewhat more likely to become involved. Nearly all of the sample would be classified as disadvantaged if they were included in a larger study of all American youth. For years, Indian youth have had a high school dropout rate, and many of their parents have not completed high school. Additionally, the unemployment rate on reservations can be as high as 80%.

Conclusions. Indian youth use alcohol more heavily than non-Indian youth. Both groups first get drunk at about the same age, but once they start drinking, Indian youth get drunk more often and, judging from the number who have experienced Blacking out, may consume more alcohol when they do get drunk. These patterns are not an isolated or time-localized phenomenon, but are relatively consistent over a 10-year period.

There may be a long-term tradition of heavy drinking because alcohol has been illegal or controlled for such a long period of time. However, there are other reasons. Few recreational or other activity resources are available on the reservation, and many young people drink because they are bored or have nothing else to do. Additionally, alcohol is a psychoactive substance, and youth report that they like being high and feeling good. About 25% of Indian youth may drink occasionally because they believe that alcohol assuages feelings of depression and/or anxiety, and 10% may drink because of anger, rebelliousness, and hostility. These latter reasons are particularly serious because they can lead to a recycling that exacerbates the basic problems; that is, alcohol temporarily makes the youth feel better, but can then cause more depression or create conflict with authorities and family that increases anger and hostility and ultimately leads to further alcohol use.

Like other youth, Indians also drink with their friends. This is a particularly important key to alcohol use by youths. Peer cluster theory hypothesizes that nearly all adolescent drinking is done within the structure of peer clusters and that peer clusters provide alcohol, initiate getting drunk, and determine and maintain attitudes and beliefs about drinking and drinking behaviors. However, an alcohol-abusing peer cluster does not appear suddenly and mysteriously to lure a youth into drinking. Contrary to the popular perception of peer pressure, which implies that the youth is a passive recipient and that peers push the youth into using alcohol and drugs, the authors maintain that a peer cluster includes the youth and that each member plays an active part in encouraging alcohol or drug use. Most youth in an alcohol-abusing peer cluster joined that cluster because they shared an underlying susceptibility to alcohol abuse with other members.

A wide range of psychosocial factors create the potential for alcohol abuse. The youth with few or no problems is likely to try alcohol but is less likely to become involved with peer clusters that use alcohol heavily. The youth with problems is far more likely to associate with other troubled youth and join with them to form groups that evolve into alcohol-abusing peer clusters.

Peer cluster theory has important implications for prevention programs. For example, one type of program focuses on creating individual resistance to peer pressure. Such a program may increase the chances that young people who are not alcohol oriented will encourage each other, within their peer clusters, to continue avoidance. This may be the reason why such programs run by youth are effective but the same programs run by adults are not.

Another form of prevention focuses on the family. Data presented here suggest that the family can be an important influence. However, it is important to recognize that family influence is not direct. When youths feel that their families provide strong sanctions against alcohol use, they are more likely to associate with peer clusters that also have strong sanctions against alcohol abuse.

The results of this study and other research indicate that family relationships, family education, and family economic status also may affect success in school. This success has at least two major effects, one on liking school, and the other on self-esteem. Youths who like school seem more likely to associate with other youth who like school. They form peer clusters that have a low tolerance for deviance and tend to strongly discourage alcohol abuse.

School success also seems to increase feelings of being socially accepted and of self-confidence. These positive feelings, in turn, tend to reduce social isolation. Whereas negative feelings of shyness, anxiety, and unhappiness may increase social isolation. Youths who feel socially isolated are likely to develop associations with other young people with similar problems, and these young people together form peer clusters that encourage alcohol abuse.

Unfortunately, some of the factors that are fundamental to alcohol abuse, that which must be addressed if alcohol abuse is to be prevented, are so ingrained and resistant to change that attacking them as a means to reduce alcohol abuse may seem impractical. For example, changing the reservation economy potentially could affect family economics and education, eventually improve family relationships, and ultimately reduce alcohol abuse.

OETTING, E.R., & BEAUVAIS, F. 1991. Orthogonal cultural identification theory: The cultural identification of minority adolescents. *International Journal of the Addictions* 25:655-685.

An orthogonal theory of cultural identification is presented as a multidimensional model which places no limits on patterns of cultural identification and adaptation: a model which allows for unicultural, bicultural, and multicultural identification; strong identification with one culture and weak identification with one or more others; or even no strong identification with any culture. This model, instead of placing cultures at opposite ends of a continuum, poses identification with different cultures as dimensions independent of each other, so that increasing identification with one culture does not necessarily entail decreasing identification with another. The authors' studies of Native American and Mexican American youth have found that: (1) identification with Anglo culture was related to having Anglo friends and to family acceptance of an Anglo marriage; and (2) identification with either the minority or the majority culture was a source of personal and social strength; but that (3) this greater strength did not translate automatically into less drug use, because drug use was related to culture-specific drug attitudes and practices. Items are reviewed for assessing cultural identification orthogonally, the implication being drawn from the research that it is essential to assess identification with particular cultures independently.

OETTING, E.R.; BEAUVAIS, F.; & EDWARDS, R. 1988. Alcohol and Indian youth: Social and psychological correlates and prevention. *Journal of Drug Issues* 18(1):87-101.

In an examination of psychosocial correlates of heavy drinking and their implications for prevention, young Native American heavy alcohol users (ages 12-16) were matched with non-users. Two subsamples were identified, one male and one female, from alcohol-using youth in a total sample of 1,772 Indian youth living on reservations. The sample was taken from 1985-86 anonymous surveys that were administered to 7th- through 12th-grade American youth in 20 different schools on four Indian reservations.

Findings. Alcohol users did not have more emotional problems, did not experience less alienation, or did not feel less self-confident or less socially accepted than non-users, but they did use other drugs and were more deviant. Alcohol users came more often from broken families, felt less family caring and had fewer family sanctions against substance abuse, had poorer school adjustment, had less hope for the future, and had more friends who encouraged alcohol and drug use.

Use of alcohol and other drugs was "inextricably linked...suggesting that there are common dynamics underlying the use of all substances" and that prevention programs aimed at only alcohol use or other drug use would be incomplete.

Conclusions. Preventive programs should start very early and should focus on increasing family strength, improving school adjustment, providing opportunities for the future, breaking up deviant peer clusters, and building peer clusters that discourage alcohol and drug use. Most important, programs must take into account the youth's peer clusters. A "Just Say No" approach will work only if it influences the internal norms of the peer cluster and does not imply that adults are "pushing" drugs on kids.

Programs that are based on increasing young people's identification with Indian culture could have some effect, but peer cluster theory suggests that they will have to somehow stop the formation of alcohol-using or otherwise deviant peer clusters and encourage the formation of peer clusters that provide strong sanctions against use. Such an approach has been lacking in "cultural" programs.

Programs based on the following "good ideas" will fail: simple self-esteem improvement; alcohol is used as a substitute for social acceptance; alcohol is taken by depressed, anxious, or otherwise emotionally disturbed youth; use of "socially acceptable" people to reach deviant youth; use of cultural ceremonies but do not change peer clusters; and providing recreational or social activities that do not completely exclude alcohol.

OETTING, E. R.; SWAIM, R.C., et al. 1989. Indian and Anglo adolescent alcohol use and emotional distress: Path models. *American Journal of Drug and Alcohol Abuse* 15(2):153-72.

Anonymous surveys of alcohol use and emotional distress of 11th and 12th grade students were administered to 327 reservation Indian adolescents and 524 Anglo adolescents. Path models based on peer cluster theory were developed and tested.

Findings. Emotional distress variables had little effect on alcohol involvement, with the exception of anger, which operated in opposite directions for the two groups. The highest relationship with alcohol involvement in both groups was with peer alcohol associations, confirming the *a priori* hypothesis that much of adolescent alcohol use is linked to peer associations. Those relationships, however, were much stronger in Anglo youth, suggesting that alcohol may be used more frequently in nonpeer situations by Indian youth, or at least in situations where the peers are not those close friends who have very similar patterns of alcohol use. The most important differences between Indian and Anglo youth, however, may be the role that anger plays in alcohol involvement. In Anglo youth, anger may be associated with problem behaviors including alcohol use. In Indian youth, higher anger is linked to higher self-esteem, and tends to reduce alcohol use.

Conclusion. These findings cast doubt on self-medication theories.

OKWUMABUA, JEBOSE O., & DURYEA, E.J. 1987. Age of onset, periods of risk, and patterns of progression in drug use among American Indian high school students. *International Journal of the Addictions* 22(12):1269-1276.

A sample of 277 Native American students (grades 7 to 12) was surveyed to examine the age of onset, patterns of progression, and periods of risk for drug use. Drawn from various tribes (including 19 Pueblo tribes, Navajo, Jicarilla, Mescalero Apache, and others), they attended a Native American boarding school located in a major metropolitan city in the Southwest. There were approximately the same number of males and females, and ages ranged from 11 to 19 years. The school was known for its respect for, and participation in, Native American tradition and ritual. Data were collected in the fall of 1985 via a teacher-administered, voluntary self-report questionnaire that included demographic and drug-use information.

Findings. Of the total sample, 81% reported having tried cigarettes, 79% drinking alcohol, 80% smoking marijuana, 44% sniffing solvents, and 7% using cocaine. About 19% reported never having tried any of these five drugs.

The period between ages 10 and 13 is related to initiation of drug use. Many began smoking cigarettes and marijuana, drinking alcohol, sniffing solvents, and using cocaine as early as 10 years of age. The period of risk for onset of marijuana was ages 10-14; solvent sniffing, 10-13; cocaine, 13-15.

Patterns of progression in drug use corroborated conclusions from previous studies which proposed that patterns of drug use among adolescents generally follow a specific path and sequence. There was a sequential progression with chronological development from "quasi-legal" (cigarettes) to a combination of "quasi-legal" and illicit drug experimentation (alcohol and marijuana) and then progressing to harder illegal drugs (cocaine). This is consistent with the pattern found in the mainstream adolescent population, though different data may be available in which no such progression exists.

Conclusions. Caution must be exercised in extrapolating the findings to the general Native American population because of the small sample size, the urban location, and the self-report format.

The findings suggest that prevention of early involvement with "quasi-legal" drugs may be efficacious in reducing the probability of future use. Drug-prevention-education programs should be targeted at reducing the risk of beginning the use of drugs rather than at reducing actual use among older users.

RILEY, WILLIAM T.; BARENIE, J.T., et al. 1990. Smokeless tobacco use in adolescent females: prevalence and psychosocial factors among racial/ethnic groups. *Journal of Behavioral Medicine* 13(2):207-220.

From a stratified, random sampling of 22 Southeastern, nonurban high schools, survey data on smokeless tobacco use and potential psychosocial risk factors were obtained from 5683 adolescent females in 1987. The sample consisted of 56% Whites, 32% Blacks, and 10% American Indians.

Findings. Of the 15.3% who reported trying smokeless tobacco, most (75%) reported only experimental use. Most (71%) reported a frequency of use of once a week or less, but 9% used it four or more times per day. The average age at initial use was 13.56, with 29% beginning before age 10. Earlier age of onset was significantly but modestly correlated with greater length, frequency, and duration of use.

Among the three largest subgroups, American Indian females had the highest rate of use (20%), followed by Whites (16%) and Blacks (11%). American Indians had the highest severity rating, followed by Blacks and Whites.

Factor analysis of the psychosocial items resulted in four factors: perceived negative consequences, substance use, modeling effects of smokeless tobacco use by others, and active, sensation-seeking lifestyle. Discriminant analysis on use indicated that modeling influences and use of other substances were the strongest predictor of initial smokeless tobacco use. Level of use, however, was most strongly associated with lower perceived negative consequences of use and the use of other substances.

Separate analyses on American Indian, Black, and White subgroups suggested that factors associated with initial use were similar but that substantial differences exist between subgroups on risk factors for level of smokeless tobacco use. For American Indians, the modeling factor had the greatest predictive power and the substance use and active life-style factor scales also had a strong relationship to level of smokeless tobacco use.

RILEY, WILLIAM T.; BARENIE, J.T.. et al. 1991. The role of race and ethnic status on the psychosocial correlates of smokeless tobacco use in adolescent males. *Journal of Adolescent Health* 12(1):15-21.

From a stratified, random sampling of non-urban high schools in the Southeast, survey data were obtained in 1987 from 5374 adolescent males (60% White, 29% Black, 8% Native American).

Findings. Over half reported trying smokeless tobacco, and approximately one third of these reported a regular, substantial level of use. The average age at initial use was 12.2 yr. and was negatively correlated with the level of use.

American Indian males had the highest rate of use (72%), followed by Whites (65%) and Blacks (22%). American Indians had the highest level of use and Blacks the lowest.

Factor analysis of the psychosocial items resulted in four factors: substance use/deviant style, modeling, perceived negative consequences, and health behavior. Discriminant analysis of initial use indicated that substance use and modeling influences were the strongest predictors of trying smokeless tobacco. Regression analysis of level of smokeless tobacco use indicated that substance use, modeling, and perceived negative consequences were equivalent in their contribute.

Separate analyses were performed for each ethnic group. Although predictors of initial use were similar, level of use was most associated with the use of other substance in Blacks and with modeling influences in Whites. For American Indians, the substance use/deviant style factors retained the great predictive power but the perceived negative consequences and modeling factors also had a strong relationship to level of use. This suggests that Black males may be less dissuaded by perceived negative consequences than Whites and American Indians, or those who use are less likely to minimize or deny the negative effects of use.

Conclusion. Race/ethnic differences should be considered in the relationship of psychosocial factors to regular smokeless tobacco use.

SCHINKE, STEVEN; BEBEL, M.Y.; et al. 1988. Prevention strategies for vulnerable pupils: School social work practices to prevent substance abuse. *Urban Education* 22(4):510-519, January.

Drawing on original data and other research on tobacco and drug use, this article describes how school social workers may execute preventive interventions with vulnerable pupils.

The tobacco-use attitudes and practices of 5th- and 6th-grade students from blue-collar families in western Washington schools were tested and sampled (*n* = 1,281). Pupils were randomly divided by school into skills, discussion, and control conditions. All youths were posttested, then retested semiannually for two years. Pupils in the skills intervention groups showed lower rates of smoking at 6-, 12-, 18-, and 24-month follow-ups than did pupils in the other groups. Across conditions, semiannual measurements showed rising tobacco use. Results indicated that school social workers can design, implement, and evaluate preventive interventions aimed at reducing the onset of smoked and smokeless tobacco use.

The vulnerability of Native American youth to drug use is illustrated by surveys taken in the Pacific Northwest. This data indicate that 38% of Indian and 13% of non-Indian youth become intoxicated with alcohol weekly; 27% and 8%, respectively, are weekly drug users. The effectiveness of prevention intervention based on a bicultural competence model was tested among 61 Native American pupils. Bicultural competence allows pupils to integrate majority culture values, norms, and behaviors without losing their identification with and respect for traditional values. Those randomly assigned to the intervention condition were taught problem-solving, communication, and social support competence skills by Native American and majority culture social workers. At the six-month follow-up, the treatment group had higher scores than the no-intervention control group on the drug knowledge measure and on ratings of self-control, alternative suggestions, and assertiveness, and reported less use of smoked and smokeless tobacco, alcohol, marijuana, and inhalants during the previous 14 days.

Conclusions. Results of the reported studies modestly support skills intervention. Indications are that leader-modeled strategies based on cognitive and behavioral methodology may have increased effectiveness in the future activities and priorities of school social workers.

SCHINKE, STEVEN P.; BOTVIN, G.J., et al. 1988. Preventing substance abuse among American-Indian adolescents: A bicultural competence skills approach. *Journal of Counseling Psychology* 35(1):87-90.

More than other Americans, Indian and Alaska-Native children and adults suffer from such substance-related problems as school-failure, antisocial behavior, unemployment, criminal arrest, and increased morbidity and mortality. However, there are significant gaps in the science of preventing substance abuse in American-Indian adolescents. An intervention approach to preventing tobacco, alcohol, and other drug abuse with young American-Indian people based on bicultural theory and social learning principles was tested.

Subjects were 137 American-Indian adolescents from two western Washington Reservation sites. Before, immediately following, and six-months after subjects received intervention, all of the subjects completed four measures: a knowledge test, attitude scale, interactive behavior test, and substance-user reports. After pretesting, subjects were randomly divided by reservation site into prevention condition (PC) and control conditions (CC). PC subjects participated in 10 group intervention sessions to learn bicultural competence skills, while subjects assigned to the control condition received no preventive intervention. PC subjects were instructed in and practiced communication, coping, and discrimination skills.

Findings. The data lent modest support to a bicultural competence skills intervention approach for preventing substance abuse among American-Indian youth. Within a controlled design, American-Indian youths who received such skills-based preventive intervention showed greater posttest and follow-up improvements than did American-Indian youths in a non-intervention control condition on measures of substance-related knowledge, attitudes, and interactive abilities, and on self-reported rates of tobacco, alcohol, and drugs use.

Conclusions. The data must be interpreted cautiously, since substance-use rates may be biased. The absence of a placebo or comparison control condition further precludes definitive conclusions about the efficacy of bicultural competence skills intervention. Nonetheless, the study represents a pioneer step toward testing bicultural competence approaches to preventive intervention.

SCHINKE, STEVEN P.; PALLEJA, J., et al. 1988. Preventing substance abuse among minority group adolescents: Applications of risk-based interventions. ***Practice Applications*** **4(4):1-16.**

One of the significant gaps in substance abuse prevention is the lack of guidelines for intervention design, targeting, and delivery with ethnic-racial minority populations, particularly adolescents. Part of the problem is the absence of appropriate terminologies for at-risk adolescents. New definitions are offered to improve the precision of intervention development and outcome research, drawing on evidence from minority adolescents. Not only are many of these youth at risk for substance abuse, but they are also underresearched.

The traditional definition of prevention in terms of primary, secondary, and tertiary are inadequate for prevention efforts with ethnic-racial minority adolescents. They represent conflicting concepts and fail to guide current programs, research, and policy, and imply a generic epidemiologic justification which does not account for cultural and racial differences in populations at risk.

Gordin has suggested new definitions of intervention levels: universal (i.e., desirable for everybody); selective (i.e., recommended only when the individual is a member of a population subgroup at above-average risk); and indicated (i.e., advisable only for persons who manifest a risk factor and are more likely than not to experience problems without intervention). Indicated prevention interventions are called for when members of the target client, patient, or subject group are found to actually manifest precursor signs of the objective for prevention intervention.

American Indian adolescents are an example of this level of prevention. Research strongly points to a precocious onset of and subsequent dependence on alcohol and psychoactive substances among American Indian people in many tribes. This technique was tested on 61 adolescents who were taught problem-solving, communication, and social support competence skills by indigenous Native American health educators using a bicultural model (Schinke, Bebel et al. 1988). At followup, the intervention group reported less substance abuse than the control group.

Despite the success of the indicated bicultural technique among Native American youths, the outcome effects were necessarily moderated by the highly specific nature of the indicated prevention intervention. "The bicultural competence model, for example, is most applicable to Native American adolescents and may not be applicable at all to other ethnic-racial American groups." The specificity of indicated efforts may restrict their generalizability and may insidiously label a group as in need of special intervention. Nevertheless, culturally-tailored preventive interventions hold particular promise for ethnic minorities because they experience vastly different problems than the general population and reside largely in defined areas.

SCHINKE, STEVEN P.; SCHILLING, R.F.,et al. 1987. Pacific Northwest Native American youth and smokeless tobacco use. ***International Journal of the Addictions*** **22(9):881-884.**

Snuff and chewing tobacco use were examined among 144 Alaska Native and American Indian adolescents recruited from tribal and reservation schools in the Pacific northwest (mean age 12.3). Results showed frequent and early use of smokeless tobacco products. Almost one fifth of all females and close to one half of all males had used snuff or chewing tobacco on more than 20 occasions. Weekly smokeless tobacco use was reported by 34% of all females and by 43% of all males. By product type, 33% of all subjects had used snuff and 28% had chewed tobacco in the past week. Among females, over one half of all subjects had used snuff or chewing tobacco before age 10 years. Among males, nearly one half of the subjects first used smokeless tobacco prior to 8 years of age. Few subjects had used cigarettes or other smoked tobacco products.

SEGAL, BERNARD. 1992. Ethnicity and drug-taking behavior. ***Drugs & Society*** **6:269-312.**

Alaskan students in grades 7-12 were surveyed to assess drug use prevalence among the ethnic groups represented: Alaskan Natives, American Indians, Asian-Pacific Islanders, Blacks, Hispanics, Whites, and Others. The sample for analysis by ethnicity was 3,563 students, of whom 2,275 (64%) were White, 721 (20%) Alaska Natives, 175 (5%) Other, 129 (4%) Blacks, 113 (3%) Asian-Pacific, 77 (2%) Hispanics, and 73 (2%) American Indians (in the state's general population, about 14% are Alaska Natives, and nonNatives make up the rest). Alaska, with its predominantly youthful population (median age 28.3 years, compared to 32.3 for the mainland U.S.), due largely to the influx of young people "seeking their fortune," has been found to have considerably higher levels of alcohol and other drug use than the lower 48. Random stratified samples were taken from the larger urban school districts (Anchorage, Fairbanks, and Juneau), and in smaller school districts, all students were included in the sample. A self-administered questionnaire was used to obtain information about drug use.

Findings. The overall pattern of prevalence of any use showed proportionally higher prevalence among Native Alaskans and Native Americans than among other groups: 74% of Alaska Natives and 73% of American Indians reported having at least tried at least one drug (other than alcohol or tobacco), as did 64% of Hispanics, 62% of Others, 57% of Whites, 51% of Asians, and 41% of Blacks.

Marijuana. Alaska Natives had the highest level of reported use of marijuana (71%), followed by American Indians (66%), Others (55%), Hispanics (53%), Whites (49%), Asian-Pacifics (43%), and Blacks (36%).

Cocaine. Prevalence of any cocaine use was highest among American Indians (21%), followed by Hispanics (18%), Whites (16%), Asian-Pacifics (12%), Alaska Natives (12%), Others (12%), and Blacks (5%).

Stimulants. American Indians had the highest prevalence of any stimulant use (40%), with Hispanics close (38%), followed by Whites (27%), Others (17%), Asians (15%), Alaska Natives (15%). Blacks had the lowest prevalence (11%).

Hallucinogens. Any use of hallucinogens was most prevalent among Hispanics (25%), followed by American Indians (21%), Whites (16%), Others (14%), Asians (11%), Alaska Natives (9%), and Blacks (6%).

Depressants. Prevalence of any use of depressants was highest among Native Americans (15%), followed by Hispanics (14%), Others (10%), Whites (9%), Asian-Pacifics (8%), Alaska Natives (7%), and Blacks (4%).

Inhalants. Hispanics had the highest prevalence rate of any reported use of inhalants (35%), followed by Native Americans (33%), Whites (27%), Alaska Natives (27%), Others (25%), Asians (17%), and Blacks (13%).

Heroin. Overall prevalence of any heroin use was low. Hispanics had the highest rate (7%), Followed by American Indians (4%), and Whites (2%). While the other groups all had rates below 2%, Alaska Natives were lowest (1.4%).

Tranquilizers. Any reported tranquilizer use was most prevalent among Hispanics (17%), followed by Whites (11%), Asian-Pacifics (9%), American Indians (8%), Others (7%), Blacks (7%), and Alaska Natives (5%).

Alcohol. Overall prevalence of any use of alcohol was highest of all substances. The highest rate was among American Indians (88%), followed by Hispanics (77%), Whites (75%), Alaskan Natives (74%), Others (74%), Asians and Pacific Islanders (73%). The lowest prevalence was among Blacks (58%).

Cigarette smoking. Reported smoking of any cigarettes was most prevalent among American Indians (82%), followed by Alaskan Natives (81%), Others (80%), Hispanics (70%), Whites (69%), Asian-Pacifics (59%), and Blacks (50%).

Chewing or smokeless tobacco. The prevalence of any use of smokeless tobacco was highest among Alaskan Natives (70%). Next highest were Others (54%), American Indians (53%), Whites (38%), and Hispanics (33%). Asian Pacifics (24%) and Blacks (20%) were lowest.

The differences between American Indians (with tribal roots in the lower 48) and Alaskan Natives, though not consistent, are in many cases sizable. For most substances, prevalence was notably higher among American Indians than among Native Alaskans, the exceptions being smokeless tobacco and marijuana. Indeed, the overall patterns of prevalence ranking for the sample of students in Alaska differs significantly from patterns found among students in the lower 48 states.

Annual and Current Prevalence Rates. Students in the sample were asked whether they had used or tried any drug (excluding alcohol and tobacco in the previous year and the previous month. This information was analyzed by calculating what proportion of monthly users and yearly users belonged to each ethnic group. The pattern found was very close to that of representation in the total sample. Native Alaskans represented greater proportions of both monthly users and annual users than of the total sample. Others and Asian-Pacific Islanders had higher proportions of annual users than of the total sample; while American Indians had a greater proportion of past-month users than of the total sample.

Grades 4 & 6. A sample of 943 children in grades 4 and 6 in the Anchorage School District were also surveyed to obtain information on early initiation. Wince this was an urban sample the ethnic breakdown was different, with larger proportions of Whites (68%) and other nonNatives (23% total), and a smaller proportion of Native Alaskans (9%). In this sample, the percentage who had tried alcohol was the same for Native Alaskans (52%). Twice as many Alaska

Natives (13%) had tried marijuana as Whites (6.5%). Significant differences between Alaska Natives and Whites were also found for inhalants (23% vs. 12%, respectively), cigarettes (36% vs. 22%), and smokeless tobacco (27% vs. 10%).

Conclusion. While only prevalence data was examined, some notable differences were found between Alaska Natives and Whites—Whites had higher prevalence on stimulants, cocaine, tranquilizers, hallucinogens, and heroin; and Alaska Natives were higher on marijuana, depressants, cigarettes, and smokeless tobacco. The prevalence rate of Native Alaskans for smokeless tobacco was particularly high, twice that of Whites. It was suggested that one reason for this difference might be the "chewing culture" of Alaska Natives.

SIGELMAN, CAROL; DIDJURGIS, T.; et al. 1992. Views of problem drinking among Native American, Hispanic, and Anglo children. *Child Psychiatry and Human Development*, 22(4):265-276.

Sixth-grade students were presented with a description of drinking behavior, and their opinions about the described drinking behavior were assessed. The study involved students from three school in the area of Tucson, Arizona: (1) a school located on the Tohon O'odham (Papago) reservation, which serves mainly low income Native American children (2 Hispanics, 19 Native Americans); (2) a Catholic school which takes students from a range of ethnic and socioeconomic backgrounds (10 Anglos, 11 Hispanics); and (3) a middle-class public school which serves mostly Anglos (20 Anglos, 5 Hispanics, 2 Native Americans).

The students listened to recording of a male adult describing a male high school student called "Dan Roberts." The description was designed to convey an image of an average adolescent who fit the profile of a typical teenage problem drinker. "Dan" tried beer at 11, drank often by 13, and at 15, his age as described, was getting drunk two or three times per week, at weekend parties and on weeknights with friends, on beer or sometimes whiskey. Some nights he has fun, other times he needs help getting home, and he passed out at two parties in the last couple weeks. The tape said that some mornings after drinking he has trouble getting up and "is grouchy."

Students were interviewed to gather their opinions of "Dan" and what the interviewers described as his "drinking problem." Interviewers assessed "perceived seriousness," theories of the cause of the drinking problem, responsibility for the problem, appropriate treatment, support for treatment, affect toward "Dan," and unconventional values.

Findings. The three groups: Native Americans, Hispanics, and Anglos were more alike than different in perceptions of "Dan." Where differences were found, usually Anglos differed significantly from Native Americans, and Hispanics scored in between, differing significantly from neither.

Anglo children rated "Dan's problem" as more severe than both the Hispanics and the Native American, differing significantly only from the Native Americans. Native Americans more often endorsed the disease theory of alcohol abuse than the other groups, but again the only significant difference was between the Anglos and the Native Americans.

The only other highly significant difference was for unconventional values, which the Native Americans endorsed most often, Hispanics less, and Anglos least. Again, the difference was significant only between the Native Americans and the Anglos. When values were controlled, ethnic differences became nonsignificant.

Conclusions. It is suggested that further research explore the connection between unconventional values and ethnicity. Given the high prevalence of alcohol abuse on the reservations, reservation-dwelling Native Americans may see alcohol abuse as more conventional than do Anglos. It would be useful to try a similar study permitting comparison of perceptions of diverse cases of drinking behavior, rather than one description of an Anglo.

Native American, Hispanic, and Anglo sixth graders reacting to an example of teenage problem drinking expressed similar beliefs and attitudes in many respects. However, Native American children viewed the problem as less serious, more often subscribed to a disease theory of alcoholism, attributed less causal responsibility to the individual, and adopted a less aggressive approach toward treatment than did Hispanic, and especially Anglo, children. Their less conventional value orientations accounted for all these differences except their stronger endorsement of a disease theory of problem drinking.

TRIMBLE, JOSEPH E.; PADILLA, A.; & BELL, C. 1987. *Drug Abuse Among Ethnic Minorities*. NIDA Office of Science monograph. DHHS Publication No. (ADM)87-1474. Washington, DC: US Government Printing Office.

Data presented at a 1983 meeting to review research on drug use and prevention among ethnic minorities, sponsored by the National Institute on Drug Abuse, are summarized. The report focuses on four ethnic groups: Blacks, Native Americans, Asian and Pacific Americans, and Hispanic Americans. Characteristics of each group are identified, followed by a synthesis of major findings in each community. This summary focuses on the information as it relates to minorities in general and Native American youth in particular.

Findings. "Only limited information is available on the prevalence of drug abuse among ethnic minority populations, as well as etiologic and developmental factors that may play a role in determining their vulnerability to drug use" (p. ix). This scarcity of information is particularly of concern since epidemiological survey data indicate that Blacks and Hispanics are overrepresented in alcohol and drug treatment programs and drug-related emergency hospital admissions, as well as in selected criminal justice actions. Furthermore, the data indicate an increasing trend in minority drug abuse.

There is a need for more current and systematic data in all areas of epidemiology, treatment, and prevention. At best, current information is uneven. All researchers emphasize the need for more culturally sensitive designs and measures beyond "white" versus "nonwhite" comparisons. Despite the diversity among these groups, "repeated identification of certain core problems associated with integration into majority Western culture helps to indicate research needs." "Further, the pressures of acculturation in changing environmental contexts may predispose individuals of varying ages and socioeconomic statuses to drug abuse in previously unconsidered ways" (p. 1).

Although alcohol and other drug abuse is believed to be a significant problem among American Indians, very little is known about its correlates or consequences. Despite important work that has been done, several critical gaps in our knowledge make it extremely difficult to assess the validity of the competing explanations of Indian substance abuse and efforts to prevent it. There is a significant lack of studies in an urban setting. Most of the information we do have deals with the Southwest and the Navajo only. We also know far more about males than females, about adults than youths. The "significant lack of specific studies on alcohol and drug abuse among Indian adolescents extends to the area of substance abuse prevention." Many programs are still in stages of development. "While some of the educational efforts are demonstrating effectiveness among non-Indian youth, there is little evidence that educational strategies are effective with Indian youth regardless of tribal affiliation or residential status."

"The available material is marked by a lack of detail and inconclusiveness that precludes its use as evidence bearing upon the relationships between substance abuse, treatment outcome, psychosocial problems, and tribal background. In addition to being inadequate for theoretical purposes, the available material is also inadequate for practical purposes. There have been no published accounts of Indian alcoholism treatment programs that would permit other Indian groups establishing new programs to learn from the successes and failures of their predecessors" (p. 5).

Conclusions. "At present our knowledge of the drug and alcohol use and abuse patterns among American's ethnic minority populations is at best spotty. Much of what we know is limited to epidemiologic studies among youth primarily at the adolescent stage of development. Little or no information exists describing and documenting the use and abuse patterns among ethnic minority adults, elderly, refugees, homeless, pregnant women and families as a unit. Yet what we do know provides us with a portrait of a very serious and complex set of problems" (p. 35).

The following research questions represent some of the fundamental areas that need immediate action:

- Which drugs are most likely to be used at which ages and under which social circumstances?
- Within an ethnic group, what are the subgroups most at risk and to what extent?
- More attention needs to be paid toward distinguishing ethnic groups and subgroups in future studies.
- What psychological characteristics are associated with drug abuse?
- Alternative measures that are sensitive to cultural differences must be developed to assess the extent and kinds of abuse.
- The efficacy of treatment and prevention strategies with regard to specific target populations needs to be determined.

- To what extent are available prevention techniques differentially effective among different age groups?
- What treatment modalities are available?

WALLACE, JOHN M., & BACHMAN, J.G. 1991. Explaining racial/ethnic differences in adolescent drug use: The impact of background and lifestyle. ***Social Problems*** **38(3):333-354.**

Large racial/ethnic differences have been found in adolescent drug use, with use highest among Native American youth, somewhat lower among White and Hispanic youth, and lowest among Black and Asian youth. This study explored whether these racial/ethnic differences in AOD use among both genders in the six aggregate racial/ethnic groups—Asian, Black, Mexican American, Native American, Puerto Rican, and White—may be attributed to racial/ethnic differences in background, and/or to in important lifestyle factors.

The data were drawn from the Monitoring the Future project, which involves large, nationally representative samples of high school seniors surveyed annually by the University of Michigan's Survey Research Center. Response rates averaged about 83% (*N* = 77,500). The racial/ethnic distribution were as follows: 77.5% White, 11.9% Black, 2.6% Asian American, 1.6 Native American, and 4.4% Mexican American, 2.0% Puerto Rican and other Latin American. Background factors examined were parents' education (as a measure of socioeconomic status), family structure, urbanicity, and region of residence.

Findings: ***The Impact of Background.*** For most ethnic groups, differences in AOD use were not due to background characteristics variation. When background variables were controlled for, Black, Mexican, Puerto Rican, and Asian youth still smoked significantly less than White adolescents. Controlling for background factors did reduce the differences in alcohol consumption between Mexican American and White students. However, controlling for background did not reduce the differences in heavy alcohol use between White youths and youths from other ethnic groups. Adjusting background factors for marijuana use did not reduce most of the ethnic differences: in fact, a number of differences were magnified when background was controlled. But controlling for background differences did lower the relatively high levels of cocaine use among Mexican and Puerto Rican males, as well as among Asian males, and Black, Mexican, Puerto Rican, and Asian females.

In short, ethnic differences in drug use among these high school seniors were not largely due to differences in socioeconomic status, family structure, urbanicity, or region of residence. The data did suggest that the relatively high levels of drug use among Native American youth might be related to their relatively disadvantaged socioeconomic status Once background differences were adjusted, the White versus Native American differences in drug use were virtually eliminated among male seniors, and reduced or eliminated among female seniors.

The Impact of Background and Lifestyle. Lifestyle factors studied include: educational and religious commitment, employment characteristics, political views, and time spent interacting with friends.

Cigarettes. Controlling for both background and lifestyle factors, produced greater differences for some groups than for others. Black, Mexican, and Puerto Rican seniors smoked less than White seniors. However, after controlling for lifestyle, Native American females smoked at only slightly higher levels than White females. Controlling for lifestyle substantially reduced the mean difference in 30-day cigarette use between White and Asian American senior females and cancelled out that for males.

Asian Americans reported lower incidence of factors that correlated positively with smoking—such as recreation and dating—and higher incidence of factors that correlated negatively with smoking—such as intention and preparation to go to college. Thus when these variables were controlled, differences between Asians and Whites in cigarette use were reduced.

Religious commitment correlated with less cigarette use, but radical political views correlated with more.

Alcohol. Prevalence of alcohol use among White, Mexican, and Native American students are similar. Controlling background and lifestyle factors reduced the magnitude of the differences between White students' rates of heavy alcohol use and the lower rates for Black, Puerto Rican and Asian students, the differences remained significant.

Marijuana. Ethnic differences in annual marijuana use were similar to cigarette and alcohol use differences. Native Americans use most, followed by Whites. Mexican adolescents were slightly lower, followed by Puerto Ricans, Blacks and Asians. When lifestyle was controlled for, the differences among White, Native American, and Mexican American students remained small among males; however, there was a reduction in female differences.

Truancy, frequency of evenings out, low religious commitment, poor grades, and level of political radicalism correlated most strongly to levels of annual marijuana use. Higher levels of parental education, and absence of one or more biological parent from the student's home both correlated with higher levels of marijuana use, even when controlling for other lifestyle factors.

Cocaine. Incorporating the lifestyle measures increased the levels of annual cocaine use among Asian males, as well as Black, Mexican, Puerto Rican, and Asian females, thus reducing the differences between them and White seniors. The addition of lifestyle controls had little impact on the cocaine use of Black, Mexican, Puerto Rican, and Native American males. Although truancy was overwhelmingly the most powerful correlate of cocaine use; evenings out, religious commitment, and living in the Northeast or West (relative to North Central) were also important correlates. Though relatively weak, the relationships between family structure, urbanicity, college plans, grades, weekly income, political orientation, or dating, and cocaine use also remained significant.

Summary The data suggested that if the subgroups did not differ along the background and lifestyle dimensions examined here, then the same levels of drug use would be found among the three relatively high use aggregate groups of high school seniors (Native American, White, and Mexican). However, sizable differences would still remain between these three groups and the three relatively-low-use groups (Puerto Rican, Black, and Asian). Cocaine was the only exception to this distinction, where use among Puerto Rican males was unexpectedly high.

Conclusions. It appears that a strong commitment to education and academic success is particularly important in explaining Asian students' lower-than-average drug use. Two possible explanations for the drug usage differences between Whites and Asians are: that Asian Americans spend less time involved in peer-oriented activities than do White seniors; or that they spend a significantly greater amount of time in education-oriented activities such as homework.

Black seniors also used drugs at considerably lower levels than average. Blacks, however, did not perform better than average academically. They tended to be more religiously committed than other youths, which past research has shown to deter drug use.

These findings reinforce earlier suggestions that two-parent families, educational success, religious commitment, and supervised activities deter adolescent drug use. From a policy standpoint, comprehensive, cooperative efforts involving schools, churches, communities and families are called for in order to reduce and prevent adolescent drug use and other problem behaviors.

WATTS, THOMAS D., & LEWIS, R.G. 1988. Alcoholism and Native American youth: An overview. *Journal of Drug Issues* 18(1):69-86.

The problem of alcoholism among Native American youth is examined from a historical perspective, highlighting the diverse patterns in traditional and contemporary life which have contributed to this ongoing and growing problem. This complex problem involves cultural, environmental, economic, and many other elements, all best understood in historical context. A Native American "community" is difficult to maintain alongside the "corporatization" of tribes and the infusion of government monies and programs. U.S. government policy, carried on in lieu of attentive observation of cultural, social, and religious differences, has remained myopically unaware of the intensity and complexity of the problem, which appears to have no one, single, concise answer or explanation. Dynamic local community involvement is called for here, as well as a "small is beautiful" theme for both economic and social policies pertaining to Native Americans. This addresses the problem at the local or community level, encouraging mediating structures for a total effort on local community ground.

WELTE, JOHN W., & BARNES, G.M. 1987. Alcohol use among adolescent minority groups. *Journal of Studies on Alcohol* 48(4):329-336.

Past surveys of minority youth drinking behaviors generally have not supported the notion that heavy use is more common among them than Whites, but in many of these studies there were few minorities. A New York state study of the drinking patterns of 27,335 7th-grade through 12th-grade students looked at ethnic differences in how often youth drink, how much they drink, the link between drinking and social problems, and the link between drinking and drug use.

Findings. Cultural background was found to exert strong influences on how youth drink and use drugs, but many "common-sense notions" about minority drinking were found to be "difficult to maintain." Among American Indian adolescents, a high proportion were heavy drinkers and drug users. Hispanic and White students had intermediate levels of heavy drinking and drug use. Male Oriental students were heavy drinkers, yet female Oriental students were light drinkers. Black students used alcohol and drugs less than these other groups. These low drinking estimates for Black and Hispanic youth may be affected by the school dropout rate in these populations.

The heavy drinking among American Indian youth is difficult to explain in terms of poverty or threats to cultural identity because drinking among Hispanic and Black youths was not unusually high. Therefore, some circumstances unique to American Indians must be responsible.

In all groups, the prevalence of alcohol use was related to heavy alcohol use and heavy alcohol use was accompanied by heavy drug use in the same proportion.

Although not all minority groups drank more than Whites, all did experience more drinking problems when the amount consumed was held constant. This supports the generalization that drinking problems are more easily acquired among lower socioeconomic status groups. This shows that factors beyond mere consumption contribute to alcohol-related problems.

YOUNG, THOMAS J. 1987. Inhalant use among American Indian youth. *Child Psychiatry and Human Development* 18(10):36-46.

According to the U.S. Indian Health Service, substance abuse is the most urgent health problem facing American Indians. Inhalants are among the first drugs used by Indian youth, with first use occurring at approximately the same time as the onset of cigarette smoking. Although prevalence rates vary among Indian subpopulations, Indian youth generally have much higher rates of inhalant use than non-Indian youth. Furthermore, while other drugs are showing a downward trend among Indian youth, inhalant use is increasing slightly. This paper examines this phenomena by reviewing related epidemiological, social, and clinical issues.

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ABBREVIATIONS

* = Abstracted Documents

AOD	alcohol and other drugs
ASS	Alaska Student Survey: Conducted 1988 7th-12th graders Multiethnic comparisons with 721 Native Americans Source: Segal (1992*)
BIA	Bureau of Indian Affairs
CSS	California Student Survey 1991-92 California Student Substance Use Survey: Includes comparisons of Asians, Blacks, Hispanics, Native Americans (n = 117), Whites, and Mixed Ethnicity, 9th & 11th graders, N = 5,543 Source: Skager and Austin (1993)
IHS	Indian Health Service
NSS	National Senior Survey: annual National High School Senior Survey Analysis of 1985-89 samples combined 537 Native American males and 531 females Source: Bachman, Wallace et al. (1991*)
TEC	Tri-Ethnic Center for Prevention Research, Colorado State University, Ft. Collins a series of surveys since 1975, each including about 1500-2500 students in grades 7 through 12 from 5 or 6 tribes. Source: Beauvais (1992a*) and various reports published by Oetting, Beauvais, Edwards, and colleagues

Prevention Research Updates

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Western Regional Center for Drug-Free School and Communities
Southwest Regional Laboratory

1. ***Prevention Goals, Methods, and Outcomes***. Gregory Austin. Fall 1988.
2. ***Substance Abuse Among Minority Youth: Native Americans***. Gregory Austin. Winter 1988. (Out of print, replaced by Update 11).
3. ***Substance Abuse Among Latino Youth***. Gregory Austin and M. Jean Gilbert. Spring 1989.
4. ***Substance Abuse Among Black Youth***. Michael Prendergast, Gregory Austin, Ken Maton, and Ralph Baker. Fall 1989.
5. ***Substance Abuse Among Asian Youth***. Gregory Austin, Michael Prendergast, and Harvey Lee. Winter 1989.
6. ***Substance Abuse Among Juvenile Delinquents and Gang Members***. John A. Pollard and Gregory Austin. Spring 1990.
7. ***Substance Abuse Among Youth with Disabilities***. Michael Prendergast, Gregory Austin, and John de Miranda. Summer 1990.
8. ***Young Children of Substance Abusers***. Gregory Austin and Michael Prendergast. Winter 1991.
9. ***Substance Abuse Among Adolescent Females***. Cristina Bodinger-de Uriarte and Gregory Austin. Summer 1991.
10. ***Ethnicity and Substance Abuse: Recent Research Findings***. Gregory Austin and John A. Pollard. Summer 1993.
11. ***Recent Research on Substance Abuse Among American Indian Youth***. Gregory Austin, E.R. Oetting, and Fred Beauvais. Fall 1993.